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Alaska Department of Fish and Game
Division of Commercial Fisheries
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Age, Sex, and Size of Yukon River Salmon Catches and Escapements, 1987

by

John A. Wilcock

State of Alaska

Steve Cowper, Governor

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AUTHOR

John A. Wilcock is Yukon River salmon stock identification project leader for the Alaska Department of Fish and Game, Division of Commercial Fisheries, 333 Raspberry Road, Anchorage, AK 99518.

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ABSTRACT

Catch statistics, escapement estimates and age, sex, and length data for chinook (*Oncorhynchus tshawytscha* Walbaum), summer and fall chum (*O. keta* Walbaum), and coho salmon (*O. kisutch* Walbaum) catches and escapements for the Yukon River in 1987 were summarized. A total of 1,328,059 salmon were harvested in the Yukon River in 1987. Approximately 45% of this catch was taken with gill nets for commercial purposes. Subsistence fish wheel catches were the next largest component and made up 31% of the total salmon harvest. Summer chum salmon comprised 60% of the total salmon harvest. Good chinook salmon production from large escapements in 1981 and poor returns from escapements in 1982 were apparent from the stronger than normal contributions of age-1.4 fish and relatively low contributions of age-1.3 fish to catches and escapements in 1987. As in most years, summer chum salmon were predominantly age 0.3, primarily due to strong parent year escapements in 1983. Fall chum salmon fishery catch samples were 77% age 0.3, while escapement samples ranged from 55% to 96% age 0.3, and from 3% to 27% age 0.4. Age 2.1 was the predominant age class in coho salmon test fishery catch samples (59%) and escapement samples (70%). Higher than normal contributions by age-1.1 fish in 1987 may indicate good production from large 1984 brood year escapements.

KEY WORDS: Yukon River, chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), age classification, catch, escapement.

INTRODUCTION

The Yukon River drainage supports major runs of chinook salmon (*Oncorhynchus tshawytscha* Walbaum), summer and fall chum salmon (*O. keta* Walbaum), and coho salmon (*O. kisutch* Walbaum). These species contribute to commercial and subsistence fisheries throughout the Yukon River drainage. Pink salmon (*O. gorbuscha* Walbaum) and sockeye salmon (*O. nerka* Walbaum) are also indigenous to the Yukon River drainage. Pink salmon returns are stronger in even-numbered years, while sockeye salmon are only rarely documented. Neither species is harvested by commercial or subsistence fishermen to any extent. Summer chum salmon are distinguished from fall chum salmon by their earlier entry timing into the Yukon River (early June to mid-July), smaller size, lower oil content, and spawning distribution in the lower and middle portion of the Yukon River drainage. Fall chum salmon enter the Yukon River from mid-July to early September and spawn primarily in the upper portion of the drainage.

The Yukon Area includes all waters of the Yukon River and its tributary streams in Alaska (Figure 1) and the Yukon Territory, Canada (Figure 2), and all coastal waters from Canal Point light near Cape Stephens southward to the Naskonat Peninsula. The Alaska portion of the river is divided into six fishing districts as follows: Districts 1, 2, and 3 in the Lower Yukon Area; and Districts 4, 5, and 6 in the Upper Yukon Area. Commercial fishing occurs throughout the mainstem Yukon River and in the lower 360 km (225 mi) of the Tanana River. Most of the commercial harvest is taken in Districts 1 and 2. Set and drift gill nets are the legal gear in the Lower Yukon, and set gill nets and fish wheels in the Upper Yukon. Chinook and fall chum salmon are also commercially harvested in a predominantly gill net fishery near Dawson City, Yukon Territory, where some fish wheels are also used. Subsistence fishing is allowed throughout the drainage with most of the effort concentrated in the mainstem Yukon River. The Yukon Area Annual Management Report (ADF&G 1988) provides a complete description of the Yukon Area and its fisheries.

Most commercial fishing occurs in the lower 230 km (200 mi) of the river, where the harvest consists of mixed species and stocks of salmon bound for spawning areas throughout the Yukon River drainage. The Alaska Department of Fish and Game (ADF&G) and the Department of Fisheries and Oceans, Canada (DFO) conduct a variety of programs that supply information used to manage and document the fisheries. These programs include: (1) documentation of catch in each fishery; (2) catch sampling for age, sex, and size data; (3) assessing the magnitude of spawning escapements by aerial and ground surveys, hydroacoustic counters, towers, weirs, and visually through a fishpass; and (4) sampling major spawning escapements for age, sex, and size data. Total run estimates are obtained by ADF&G using hydroacoustic counters in the mainstem Yukon River near Pilot Station, and by DFO using tag and recapture methods at the US/Canada border.

Between 1969 and 1981 Yukon River salmon age, sex, and size sample data summaries were annually reported in the ADF&G Arctic-Yukon-Kuskokwim Region Age, Sex, and Size Composition of Salmon Report Series. Since 1982 the composition of Yukon River salmon catches and escapements by age, sex, and size have been reported by McBride, Hamner, and Buklis (1983), by Buklis and Wilcock (1984, 1985, and 1986), and by Buklis (1987b).

Yukon River salmon commercial and subsistence harvests and spawning escapements in numbers of fish by age and sex for, indices of relative abundance and age and sex summaries for other major spawning escapements, and lengths by age and sex for each sampled fishery and escapement were summarized in this report.

These data constitute the fundamental biological information necessary to regulate Yukon River salmon fishery harvests and monitor the status of the spawning stocks.

METHODS

Quantifying Catch and Escapement

Alaskan commercial catch data presented in this report were compiled by the Division of Commercial Fisheries for each management district and were based on computer tabulations of individual harvest receipts (fish tickets) that by law document the volume of sale from fishermen to processors. Subsistence catch data were tabulated from personal interviews of subsistence fishermen in selected villages and from mail-in questionnaires. The District 4 summer chum salmon commercial catch included an estimate of unused males that were a by-product of the commercial summer chum salmon roe fishery in this district. Methods of estimation are discussed in ADF&G (1988).

Gear types used to harvest salmon in the subsistence fishery were not accurately documented for the Upper Yukon Area, where both gill nets and fish wheels are used. Due to lack of adequate gear survey information, subsistence catches by gear type were subjective estimates made by F.M. Andersen, ADF&G, Fairbanks. All Yukon Territory catch data were obtained from DFO. Canadian catch was reported as entirely by gill net, although an unknown portion of the commercial and subsistence harvest was taken by fish wheels. Although DFO did not provide harvest data by gear type, gill nets are thought to account for the majority of both the chinook and chum salmon harvest in the Yukon Territory.

Most escapement data were peak aerial survey estimates for selected spawning streams. An effort was made to survey the major spawning populations and these indices were assumed to represent overall trends in escapement. Additional escapement estimates were obtained by other methods as follows:

1. Summer chum, chinook, and pink salmon escapements to the East Fork Andreafsky River were enumerated by ADF&G using counting towers (Buklis 1987a).

2. Summer chum salmon escapement to the Anvik River (Buklis 1987a) and fall chum salmon escapement to the Sheenjek River (Barton 1988b) were enumerated by ADF&G using side-scanning sonar counters.

3. Fall chum salmon escapement to the Chandalar River was enumerated by the United States Fish and Wildlife Service (USFWS) using side-scanning sonar counters (Simmons 1988).

4. Chinook, fall chum, and coho salmon escapements to Clear Creek were enumerated by ADF&G (D. Parks and J. Raymond, ADF&G, Fairbanks, personal communications) using a weir. In addition, DFO used weirs to enumerate chinook salmon escapement to the Big Salmon River and fall chum salmon escapement to the Fishing Branch River.

5. DFO personnel visually counted chinook salmon ascending a fishpass at Whitehorse Dam in Yukon Territory, Canada.

6. Fall chum salmon escapement to the Toklat and Delta Rivers was estimated by ADF&G from ground surveys and stream residency time expansion factors.

7. A hydroacoustic counting site was operated by ADF&G on the mainstem Yukon River at mile #123 to obtain total salmon population estimates by species (Berning, R., ADF&G, personal communications).

8. Chinook salmon tag and recapture studies were conducted by ADF&G in the Chena (Barton 1988a) and Salcha (Skaugstad 1988) Rivers to obtain spawning escapement estimates. A chinook and fall chum salmon tag and recapture study was conducted by DFO immediately upstream from the US/Canada border to obtain population estimates for the Canadian portion of the drainage, excluding the Porcupine River.

Age, Sex, and Length Determination

Salmon were sampled for scales, sex, and length. The annuli on the scales provided age information for salmon in the catch and escapement (Gilbert 1922). Scales were taken from the left side of the fish approximately two rows above the lateral line along the diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Scales were mounted on gum cards and permanent impressions made in cellulose acetate (Clutter and Whitesel 1956). Resorption of scale margins required collection of vertebrae from fall chum salmon escapement samples as an alternate source of age information for those stocks. Ages are reported in European notation. Sex determination was based on examination of external morphological features for fish which had secondary sexual characteristics sufficiently developed to permit estimation of sex. Gonads were examined whenever external characteristics were not sufficiently distinct.

An attempt was made to sample fish from the commercial catch for each gear type in each district. However, because of the logistics involved in sampling such widely dispersed fisheries, many of the smaller harvests were not sampled. The majority of the commercial catch samples were collected in Districts 1 and 2. Subsistence catches were generally not sampled. Age and sex composition of subsistence harvests for a given district and gear type were based on commercial catch or test fishery catch samples taken by that gear type in the same or, in some cases, a neighboring district.

Primarily because commercial fishing for fall chum salmon was not permitted in the Alaskan portion of the drainage, the only fall chum samples collected in 1987 were obtained from the commercial gill net fishery near Dawson, Yukon Territory;

from the subsistence fish wheel fishery in District 5; from the gill net test fishery in District 1; and from the fish wheel test fishery in District 4. Age and sex composition of Yukon Territory subsistence harvest was estimated by applying the Yukon Territory commercial catch sample data. District 1 test fishery samples from Big Eddy and Middle Mouth were used to estimate age and sex composition of Districts 1 and 2 subsistence harvest. Age and sex composition of District 4 subsistence fish wheel harvest was estimated using samples from a test fishing fish wheel located on the north bank near Ruby.

An attempt was made to sample the major chinook and chum salmon spawning populations. Most escapement data were collected from carcasses, although live salmon were sampled from weir traps at Clear Creek and Fishing Branch. In addition, live fish were captured with beach seines at the East Fork Andreafsky, Anvik, Delta, and Sheenjek Rivers; with fish spears at the Toklat River and at Bluff Cabin Slough; with snagging gear at the Nulato, Henshaw and Jim Rivers; and with gill nets at the Innoko, Nulato, Gisasa, Henshaw, and Jim Rivers.

Age and sex composition was estimated for each sampled fishery with a stratified systematic sampling design (Cochran 1977). Strata were defined as individual fishing periods for District 1 and 2 chinook salmon and as weekly periods (generally two fishing periods per week) for District 1 summer chum during that portion of the season when the majority of the harvest was taken. For the other districts and fisheries, time strata were of variable length depending on the number of samples collected. An attempt was made to sample sufficient numbers of fish within strata to estimate the true proportion of each major age class in the catch within ± 5 percentage points 90% of the time.

Age compositions and associated variances were estimated with procedures outlined by Cochran (1977) for stratified sampling programs:

$$C_{tj} = C_t P_{tj} \qquad V[C_{tj}] = \frac{(C_t)^2 \cdot P_{tj}(1-P_{tj})}{N_t - 1}$$

$$C_{.j} = \sum_{t=1}^{T} C_{tj} \qquad V[C_{.j}] = \sum_{t=1}^{T} V[C_{tj}]$$

Where: C_t = number of fish caught in stratum t,

P_{tj} = fraction of sample in stratum t of age j,

N_t = number of samples during stratum t,

C_{tj} = estimated number of fish of age j during stratum t,

T = total number of strata,

$C_{.j}$ = estimated number of fish of age j for the season, T.

If there were insufficient samples to attain the above levels of precision and accuracy, the samples were pooled into a single sample period for that fishery or escapement to estimate catch or escapement by age and sex. Sample data were presented for those escapement samples with only aerial survey indices of abundance, but indices of abundance were not estimated by age and sex.

Lengths were measured from mid-orbit to fork of tail to the nearest 5 mm. Some samples collected in Yukon Territory by DFO were measured from tip of snout to fork of tail, or from post orbit to hypural plate. Average lengths, by age and sex, were reported for each sampled fishery and escapement. Length samples were not stratified by sample period.

RESULTS

Commercial and Subsistence Harvest

Commercial harvest (Alaska and Canada combined) totaled 142,675 chinook, 521,567 summer chum, and 40,341 fall chum in 1987 (Table 1). The summer chum salmon commercial harvest includes an estimated 58,335 unused males taken in the District 4 roe fishery. Fall chum salmon run strength in 1987 was judged insufficient by ADF&G to support commercial harvest and the commercial fishery was not opened in the Alaskan portion of the drainage during the fall season. Commercial fall chum harvest was allowed by DFO in Yukon Territory, Canada. There was no commercial coho harvest in the Yukon River in 1987, because coho salmon are typically harvested incidentally during the commercial fall chum salmon fishery in the Alaskan portion of the drainage.

The chinook salmon harvest was 29% above that of 1986. The summer chum salmon harvest (excluding unused males) was 53% below the 1986 level, and the fall chum salmon harvest was 73% below. The chinook and summer chum (excluding unused males) salmon commercial harvests in the Alaska portion of the drainage in 1987 were 29% above and 35% below the recent 5 year (1982-86) averages, respectively.

Fishermen in the Alaska portion of the drainage received an estimated $7,164,000 for their catch in 1987, 8% above the 1982-86 average. The largest commercial harvests of chinook and summer chum salmon occurred in District 1. The only commercial harvest of fall chum salmon occurred in Yukon Territory, Canada. Gill nets accounted for the majority of the harvest for each species. Commercial harvest and catch per unit effort by species and fishing period is presented for each district in Appendix A.

Subsistence harvest (Alaska and Canada combined) totaled 59,450 chinook, 275,914 summer chum, 249,738 fall chum, and 48,603 coho salmon in 1987 (Table 2). The chinook salmon harvest was 9% above that of 1986, summer chum salmon 5% below, fall chum salmon 49% above, and the coho salmon harvest 41% above the 1986 level. The chinook, summer chum, fall chum, and coho salmon subsistence harvests in the Alaska portion of the drainage in 1987 were 29% above, 7% above, 41% above, and 38% above the 1982-86 average, respectively.

The largest chinook and fall chum salmon subsistence harvests occurred in District 5, the largest summer chum salmon harvest in District 4, and the largest

coho salmon harvest in District 6. Fish wheels accounted for the majority of the summer chum, fall chum, and coho salmon subsistence harvests, while the majority of the chinook salmon were taken by gill net.

Escapement Abundance

Minimum and optimum escapement objectives have been established by ADF&G for the major spawning populations of chinook, summer chum, and fall chum salmon for which a sufficient data base exists (ADF&G 1988). Most escapement objectives are based on historical aerial survey indices of abundance, and are subject to change as more complete information becomes available. Yukon River salmon spawning escapement index counts and population estimates for all areas monitored in 1987 are presented in Table 3. Daily tower, sonar, weir, and fishpass salmon escapement counts are presented in Appendix B.

Chinook salmon spawn in tributary streams throughout the Yukon River drainage (Figure 3). Chinook salmon optimum escapement objectives have been established for the East (1,600) and West Fork (1,000) Andreafsky, Anvik (500), North (500) and South (500) Fork Nulato, Chena (1,700), and Salcha (3,500) Rivers. Optimum escapement objectives were achieved for all streams in the lower portion of the drainage for which objectives have been established. The Andreafsky River (East and West Forks combined) aerial survey count of 4,889 chinook salmon was the second largest ever recorded. The Nulato River count (1,638) was the third largest. Aerial survey counts for the Chena (1,312) and Salcha (1,898) Rivers were both below the established optimum index levels. Optimum total spawning population levels have not yet been established for these rivers as total escapements have only been estimated since 1986 for the Chena River and 1987 for the Salcha River. Total 1987 spawning populations to the Chena (6,404) and Salcha (4,771) Rivers were estimated from mark and recapture studies.

Chinook salmon escapements to the Canadian portion of the drainage in 1987 were variable, but were generally below desired levels as they have been for most years since 1982. The peak count for the Little Salmon River (469) in 1987 was the third highest ever recorded. However, the peak count of 256 chinook salmon for index areas in the Nisutlin River and the Whitehorse fishway count of 256 chinook salmon (including 120 fish taken for hatchery brood stock) were the lowest observed since 1977. The 1987 DFO spawning population estimate of 13,493 chinook salmon for the Yukon River drainage in Canada was somewhat below the 1986 estimate of 17,500 fish and was well below the objective of 33,000 to 43,000 fish established by the US/Canada Joint Technical Committee.

Spawning primarily in tributaries of the lower Yukon, the Koyukuk, and the Tanana Rivers (Figure 4), aerial survey optimum escapement objectives have been established for summer chum salmon in the East (109,000) and West Forks (116,000) Andreafsky, Anvik (356,000), North Fork Nulato (53,000), and Hogatza (17,000) Rivers. Summer chum salmon escapement objectives were not achieved for any Yukon River spawning tributaries in 1987. Aerial survey counts for the East and West Forks of the Andreafsky River were 6,687 and 31,998 summer chum salmon, respectively, while the tower count estimate for the East Fork was 45,221 fish. Peak aerial survey count for the North Fork Nulato River (4,658) was only 9% of the optimum escapement objective of 53,000. The Anvik River sonar escapement

count of 455,876 summer chum salmon was 6% below the optimum escapement objective of 487,000 sonar counts.

Fall chum salmon spawn in spring fed upwelling areas in streams and sloughs in the upper portion of the Yukon River drainage (Figure 5). Minimum total season escapement objectives have been established for the Sheenjek (62,000), Toklat (33,000), and Delta (11,000) Rivers. An interim escapement objective range of 50,000-120,000 fish for the Fishing Branch River was established by the US/Canada Joint Technical Committee in 1987.

Fall chum salmon escapements in 1987 showed a marked improvement for most index areas compared to poor escapements in 1982-84, and were most similar to 1985 escapement levels. Escapement population estimates of 140,086 fall chum salmon for the Sheenjek River, 22,141 for the Toklat River, and 21,180 for the Delta River in 1987 were 126% above, 33% below, and 93% above the minimum escapement objectives for each of these streams. The escapement population estimate of 48,956 for the Fishing Branch River was 2% below the recently established minimum objective. Improved escapements for 1987 are presumed to have been a direct result of the prohibition of commercial fishing for fall chum salmon in Alaska.

Comprehensive enumeration of fall chum salmon with side-scanning sonar was undertaken on the Chandalar River for the first time in 1986 and was continued in 1987. The USFWS estimate of 52,416 fall chum salmon in 1987 was 12% below the 1986 estimate.

The DFO spawning escapement estimate was 80,876 fall chum salmon for the mainstem Yukon River drainage in Canada (excluding the Porcupine River drainage) in 1987. This was somewhat below both the 1986 estimate of 87,990 fish and the escapement objective of 90,000 to 135,000 fish established by the US/Canada Joint Technical Committee.

Coho salmon spawn in widely scattered tributaries throughout the Yukon River drainage, although the major concentrations have been documented in the Tanana River drainage (Figure 6). Coho salmon escapement counts are generally obtained ancillary to fall chum salmon escapement survey priorities, therefore a comprehensive data base does not exist. Coho salmon escapements in 1987 appeared above average for spawning areas in the Nenana River drainage, and well above average in the upper Tanana River spawning areas. Escapement to the Delta Clearwater River (22,300) was more than double the highest previously recorded count.

Age, Sex, and Length Composition

Age, sex, and length composition of Yukon River salmon catches and escapements in 1987 are presented separately for each species.

Chinook Salmon

Age composition of the entire Yukon River harvest of chinook salmon in 1987 was estimated to be 72% age 1.4, 11% age 1.5, 8% age 1.3, and 4% age 1.2, with several other age classes present in small proportions (Table 4, Appendix C). Females accounted for an estimated 50% of total river harvest. In 1987, weaker

than normal contributions by age-1.3 fish indicate relatively poor production from escapements in 1982, and stronger than normal contributions by age-1.4 fish indicate good production from the large escapements observed in 1981.

District 1 and 2 combined commercial and subsistence gill net catches comprised 70% of the total river harvest. Age and sex composition differed between unrestricted mesh and 6-in (15.2 cm) maximum mesh size fishing periods in Districts 1 and 2 (Appendices C.1-C.4). Similar to previous years, the contribution of females caught during unrestricted mesh periods ranged from 42.6% to 59.7% with an average of 52.4% for the two districts combined. Contributions during restricted mesh fishing ranged from 26.2% to 48.5% with an average of 38.4%. Age-1.4 fish were the largest contributor to catches in both unrestricted and restricted mesh periods (75.3%-85.0% and 42.4%-79.4%, respectively). Age-1.3 fish, which generally comprise from 10% to 30% of District 1 and 2 catches in recent years, comprised only 6.6% of District 1 and 8.1% of District 2 season totals in 1987.

Subsistence gill net harvests in Districts 1, 2, and 3 and in Canada were not sampled. Since these fisheries utilize the same gear types and occur concurrently with the commercial fisheries in these districts, commercial harvest age and sex frequencies were applied to the subsistence harvests (Appendices C.10-C.13). Because of the significant intermixing of commercial and subsistence gill net and fish wheel catches by fishermen in District 4, estimates for both gear types and fisheries were pooled and assumed to be self-weighting for this district (Appendix C.6). More intensive sampling effort in District 5 allowed for separate catch age and sex composition estimates by gear type, although commercial and subsistence catches were pooled for each gear type. Results indicate that fish wheels captured a greater proportion of younger male fish than did gill nets (nonstatistical comparison = NSC). The District 5 gill net catch sample was 49.6% female and 71.8% age 1.4, while the fish wheel catch sample was only 31.1% female and 55.5% age 1.4 (Appendix C.7 and C.8). Age and sex composition was not estimated for District 6 harvests due to lack of appropriate samples.

Mean size of chinook salmon age groups in the District 1 commercial gill net catch ranged from 567 mm for age-1.2 to 940 mm for age-1.5 males, and from 720 mm for age-2.3 to 905 mm for age-1.6 females (Table 5). Size of chinook salmon in the District 5 combined commercial and subsistence fish wheel catch ranged from 451 mm for age-1.1 to 971 mm for age-1.5 males, and from 744 mm for age-1.3 to 892 mm for age-1.5 females. Other catch samples exhibited size frequencies within the range of the samples from Districts 1 and 5 (Table 5).

Age, sex, and size composition of chinook salmon samples collected in 1987, but not applied to fishery catches or escapements, is presented in Appendix C.14.

Age and sex composition of chinook salmon escapements in 1987 differed (NSC) from most previous years in several respects (Table 6). Age-1.4 fish in Lower Yukon River escapements have generally been lower in abundance and age-1.3 fish higher in abundance, than in Lower Yukon commercial catches. However, in 1987 age-1.4 chinook salmon in Lower Yukon River spawning areas were similar in abundance (83.7%, 75.2%, 75.5%, and 76.0% for the Andreafsky, Anvik, Nulato, and Gisasa Rivers, respectively) to lower river commercial catches. Age-1.3 contributions to Lower Yukon escapements in 1987 ranged from 6.5% for the Nulato River to 13.5% for the Gisasa River, and were similar to District 1 and 2 harvest contributions (6.6% and 8.1%).

In most previous years, escapements in the upper river have displayed a consistent trend toward older fish and proportionally more females than escapements downriver (NSC). However, in 1987 the abundance of age-1.4 fish in the Chena (75.4%) and Salcha (73.5%) Rivers in the Middle Yukon were similar to the lower end of the range of abundance for Lower Yukon escapements (75.2% to 83.7%). Relative abundance of age-1.4 fish in escapements sampled in Yukon Territory was less than the ranges for both Lower and Middle Yukon River escapements for all locations (range 35.3% to 71.1%), except the Nordenskjold River (86.7%). Age-1.3 abundance was generally low throughout the drainage. However, the highest frequencies observed (for locations where reasonable numbers of samples were collected) were obtained for Tatchun Creek (19.3%) and the Big Salmon River (15.1%) in Canada. Age-1.5 fish displayed the previously observed trend of older fish in upriver escapements, as abundance increased from approximately 5% for the Lower Yukon, to approximately 8% for the Middle Yukon, to approximately 15% for the Upper Yukon in 1987.

The abundance of female chinook salmon in Yukon River escapements has generally varied greatly and ranged from approximately 25% to 75% for all locations within each year since 1982. However, female contributions in 1987 were generally similar for all escapements. Percentage contributions were >50% for all locations (range from 51.6% to 73.4%), except the mainstem Yukon River in Canada (26.1%) for which a small sample size and was collected primarily by gill nets.

Similar to previous years, the occurrence of fish with two freshwater annuli was much greater in the Upper Yukon River spawning streams than in other regions of the drainage (NSC). For example, 13.9% of samples from the Big Salmon River were estimated to have two freshwater annuli in 1987.

Average size of male chinook salmon in Yukon River escapements ranged from 415 mm for a single age-1.1 fish from the Andreafsky River to 1,062 mm for age-1.5 fish from the Big Salmon River in Canada (Table 7). Average size of females ranged from 565 mm for an age-1.2 fish from the Salcha River to 994 mm for age-1.5 fish from the Big Salmon River in Canada.

Summer Chum Salmon

Samples sizes of summer chum salmon from the District 1 commercial gill net fishery, and District 4 and 6 commercial fish wheel fisheries were sufficient to permit estimates of harvest by age and sex. Harvest estimates for Districts 2 and 3 by age and sex were based on the composition of the District 1 sample. Age and sex composition estimates for commercial and subsistence gill net harvests in Districts 4, 5, and 6, and fish wheel harvest in District 5 could not be estimated because of a lack of appropriate sample data. Subsistence harvest age and sex composition was estimated using the commercial catch sample for that district and gear type, when available. The number of summer chum salmon harvested by age, sex, and fishery for the entire drainage is presented in Table 8, while age and sex composition for each fishery is presented by sample period in Appendix D. Age, sex, and size composition of samples collected but not applied to fishery catches or escapements is shown in Appendix D.11.

Age and sex composition for 92% of total drainage summer chum salmon harvest was estimated (Table 8). As in most years, age 0.3 accounted for the majority

of total utilization comprising 61% of total harvest, followed by ages 0.4 (32%), 0.5 (7%), and 0.2 (0.02%). Sex composition was 48% female.

Samples from the commercial gill net fishery in District 1 were comprised of fewer age-0.3 fish (53%) and fewer females (44%) than were fish wheel samples from the District 4 commercial fishery (82% age 0.3 and 53% females), District 4 subsistence fishery (70% age 0.3 and 57% females), and District 6 commercial fishery (62% age 0.3 and 59% females). Average size by age and sex group did not differ substantially (NSC) between districts or gear types (Table 9). These results are similar to those of previous years.

A temporal trend in age composition (NSC) is apparent for the District 1 commercial gill net fishery (Appendix D.1). As the season progressed age 0.4 declined in relative contribution, while age 0.3 increased. This trend has been noted for most previous years with sufficient sample data.

Age, sex, and length data for summer chum salmon were collected for a number of spawning locations in 1987 which have not been regularly sampled in previous years (Tables 10 and 11). The majority of these samples were collected from fish which were captured alive using a variety of gear types and sacrificed to obtain electrophoretic tissue samples for U.S. Fish and Wildlife Service (USFWS) stock identification studies. Due to small sample sizes and the bias associated with gear selectivity for specific age, sex, and size categories, age composition information for the Innoko, Nulato, Henshaw, and Jim River samples cannot be assumed to represent the entire escapement for each location.

Age composition differed dramatically for the East Fork Andreafsky and Anvik River spawning stocks (NSC), with age 0.3 comprising an estimated 66.6% of the Anvik River escapement, and age 0.4 accounting for 66.6% of the Andreafsky River sample. Sex composition was 58.6% female for the East Fork Andreafsky River and 65.1% for the Anvik River. Samples from both locations were collected by beach seine gear throughout the spawning migration.

Fall Chum Salmon

The number of fall chum salmon harvested by age, sex, and fishery for 1987 is presented in Table 12. Age and sex composition for each fishery and for samples collected but not applied to fishery catches or escapements is presented in Appendix E. Age and sex composition for 79% of the total drainage fall chum salmon harvest was estimated. Age-0.3 male fall chum salmon comprised 54.3% of the commercial harvest in Yukon Territory, Canada. Age-0.3 fish, both males and females, accounted for 76.0% of the harvest.

Mean length of males was larger than for females (NSC) for all ages from the District 5 subsistence fish wheel and Yukon Territory commercial gill net harvests (Table 13).

Age composition of fall chum salmon caught in the Districts 1 and 2 gill net subsistence fishery was primarily age-0.3 fish (81.8%) estimated from samples for Big Eddy and Middle Mouth test fishing sites combined. District 4 and 5 subsistence fish wheel harvests were also composed of predominantly age-0.3 fish (76.4% each district).

Age and sex samples were collected from spawning escapements to the Toklat, Delta, and Sheenjek Rivers, and Bluff Cabin Slough on the Tanana River in the Alaska portion of the drainage by ADF&G, and from the Fishing Branch, mainstem Yukon, and Kluane Rivers in Yukon Territory by DFO (Table 14). Samples from the Chandalar River were collected by USFWS. Age compositions ranged from 55.2% age 0.3 for the Chandalar River to 95.9% age 0.3 for Bluff Cabin Slough, and from 2.8% age 0.4 for the Bluff Cabin Slough to 41.8% age 0.4 for the Chandalar River.

Sex composition was variable, ranging from 23.9% female for the Chandalar River to 66.3% female for the Sheenjek River.

Size of fall chum salmon by age and sex group was smaller (NSC) for samples from the Tanana drainage than for samples from the Porcupine drainage (Table 15). Samples collected from spawning grounds in Canada by DFO were measured differently and cannot be directly compared.

Coho Salmon

Commercial harvest of coho salmon in Yukon River fisheries is entirely incidental to commercial harvest of fall chum salmon in Alaska. Since commercial fishing for fall chum salmon was not permitted in Alaska in 1987, there was no commercial harvest of coho salmon on the Yukon River.

Age, sex, and size composition of District 1 test fishery samples collected but not applied to fishery catches or escapements is shown in Appendix F. As in most years, age 2.1 was the predominant age class in gill net catches at both Big Eddy (58.3%) and Middle Mouth (60.6%) test fishing sites. However, abundance of age-1.1 fish was higher in 1987 (36.0% and 25.0% for Big Eddy and Middle Mouth sites, respectively) than in most previous years which have generally ranged from 3% to 20% for both locations. This difference was presumed to be primarily due to the success of large parental escapements in 1984, but may also have been affected to some degree by changes in scale ageing personnel. Previous ageing had been done by readers primarily familiar with chum salmon scales which do not require interpretation of freshwater annuli. Ageing in 1987 was performed by a reader more familiar with the interpretation of freshwater annular growth of chinook salmon scales. Ages of coho salmon scales aged by both the present reader and previous readers were compared. Differences between readers for both assigned ages of individual fish and sample age compositions were minor (NSC) and would not have accounted for the unusually large contribution of age-2.1 fish observed in 1987 .

A coho salmon escapement sample was collected from the Delta Clearwater River for the fourth consecutive year. Once again, age 2.1 predominated, accounting for 69.7% of the sample (Table 16). Similar to District 1 test fishery samples, the incidence of age-1.1 fish was greater in 1987 (27.6%) than in previous years (NSC). Females accounted for 48.0% of the sample.

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TABLES AND FIGURES

Table 1. Yukon River salmon commercial gill net (GN) and fish wheel (FW) catch in numbers of fish by district and species, 1987.

	Chinook			Summer Chum[a]			Fall Chum			Coho		
District	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total
1	76,643	0	76,643	222,898	0	222,898	0	0	0	0	0	0
2	47,458	0	47,458	174,876	0	174,876	0	0	0	0	0	0
3	2,039	0	2,039	3,501	0	3,501	0	0	0	0	0	0
4A	55	36	91	8,158	93,097	101,255	0	0	0	0	0	0
4B	584	415	999	89	7,524	7,613	0	0	0	0	0	0
4C	120	314	434	0	451	451	0	0	0	0	0	0
4 Total	759	765	1,524	8,247[b]	101,073[b]	109,320[b]	0	0	0	0	0	0
5A	0	0	0	0	0	0	0	0	0	0	0	0
5B	693	490	1,183	44	318	362	0	0	0	0	0	0
5C	1,136	220	1,356	0	0	0	0	0	0	0	0	0
5D	388	178	566	0	0	0	0	0	0	0	0	0
5 Total	2,217	888	3,105	44	318	362	0	0	0	0	0	0
6A	0	0	0	113	2,054	2,167	0	0	0	0	0	0
6B	21	579	600	605	6,277	6,882	0	0	0	0	0	0
6C	176	426	602	230	1,331	1,561	0	0	0	0	0	0
6 Total	197	1,005	1,202	948	9,662	10,610	0	0	0	0	0	0
Ak Total	129,313	2,658	131,971	410,514	111,053	521,567	0	0	0	0	0	0
Canada	10,704	0	10,704	0	0	0	40,341	0	40,341	0	0	0
Total	140,017	2,658	142,675	410,514	111,053	521,567	40,341	0	40,341	0	0	0

[a] Includes "equivalent salmon" converted from roe sales in Districts 4, 5, and 6. Conversion factor of 1 pound (0.453 kg) roe equal to one chum salmon was used.

[b] District 4 summer chum salmon commercial catch totals include an estimated 58,335 fish harvested (4,400 by gill net and 53,935 by fish wheel) but not sold in the round, sold for roe, or used for subsistence purposes. These fish are essentially all males and are the by-product of the commercial summer chum salmon roe fishery in this district. Methods of estimation are discussed in the 1987 Yukon Area Annual Management Report (ADF&G 1988).

Table 2. Yukon River salmon subsistence gill net (GN) and fish wheel (FW) catch in numbers of fish by district and species, 1987.

	Chinook[a]			Summer Chum[b]			Fall Chum[c]			Coho[d]		
District	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total
1	7,278	0	7,278	30,760	0	30,760	18,467	0	18,467	6,396	0	6,396
2	9,866	0	9,866	33,134	0	33,134	13,454	0	13,454	6,894	0	6,894
3	4,661	0	4,661	4,161	0	4,161	2,853	0	2,853	682	0	682
4	3,965	3,996	7,961	23,611	133,795	157,406	4,190	37,711	41,901	355	3,196	3,551
5	13,753	5,509	19,262	2,485	22,365	24,850	12,925	116,323	129,248	689	6,197	6,885
6	-	-	4,096	5,121	20,482	25,603	3,991	35,920	39,911	2,420	21,776	24,195
Ak Total	-	-	53,124	99,272	176,643	275,914	55,880	189,954	245,834	17,435	31,168	48,603
Canada			6,326	0	0	0	0	0	3,904			0
Total	-	-	59,450	99,272	176,643	275,914	55,880	189,954	249,738	17,435	31,168	48,603

[a] Subsistence catch of chinook salmon is not known by gear type, but was estimated for Districts 4 and 5 by applying the proportion caught by gear type in the commercial fishery in each District. No estimate was made for District 6.

[b] Subsistence catch is not known by gear type, but a subjective estimate is that fish wheels account for 85% of the District 4 summer chum salmon subsistence catch, 90% of the District 5 catch, and 80% of the District 6 catch.

[c] Subsistence catch is not known by gear type, but a subjective estimate is that fish wheels account for 90% of the fall chum salmon subsistence catch in Districts 4, 5, and 6.

[d] Subsistence catch is not known by gear type, but a subjective estimate is that fish wheels account for 90% of the coho salmon subsistence catch in Districts 4, 5, and 6.

Table 3. Yukon River salmon spawning escapement index counts and population estimates by species, 1987.[a]

Stream	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Pink
Mountain Village Stream	7/21	Poor	7	149	--	--	--
Andreafsky River							
East Fork Tower Count	6/25-7/25		2,011	45,221	--	--	676
East Fork Aerial Survey	7/27	Good	1,608	6,687	--	--	--
West Fork Aerial Survey	7/26	Good	3,141	31,998	--	--	--
Allen Creek	7/26	Good	140	3,537	--	--	--
Atchuelinguk River (Chulinak R)	7/26	Good	674	11,973	--	--	--
Yukon R Sonar (Pilot Station)[b,c]	6/8-9/6		116,851	687,934	586,586	241,497	--
Anvik River							
Aerial Survey							
Mainstem River	7/23,7/30	Fair-Poor	1,042	122,080	--	--	--
Beaver Creek	7/23,7/30	Good	37	14,840	--	--	--
Canyon Creek	7/23	Poor	4	1,320	--	--	--
Otter Creek	7/23,7/30	Fair-Poor	74	12,284	--	--	--
Swift River	7/23,7/30	Fair-Poor	8	6,735	--	--	--
Yellow River	7/30	Poor	8	153	--	--	--
McDonald Creek	7/23	Poor	1	450	--	--	--
Sonar Count[d]	6/21-7/26		--	455,876	--	--	--
Nulato River							
Below Forks	7/26	Good	17	2,505	--	--	--
South Fork	7/26	Good	493	4,094	--	--	--
North Fork	7/26	Good	1,128	4,658	--	--	--
Koyukuk River Drainage							
Gisasa River	7/27	Good	731	2,123	--	--	--
Dakli River	7/27	Fair	--	1,851	--	--	--
Wheeler Creek	7/27	Fair	1	1,641	--	--	--
Hogatza River							
Caribou Creek	7/27	Too Late	--	2,944	--	--	--
Clear Creek	7/27	Too Late	--	2,725	--	--	--
Henshaw Creek[e]	8/11		20	35	--	--	--
South Fork Koyukuk River	8/2	Fair-Poor	136	35	--	--	--
Jim River	8/2,8/14p	Poor	100	401	--	--	--
Lower Tanana River Drainage							
Kantishna River Drainage							
Toklat River (lower mainstem)	10/6	Fair	--	--	2,220	--	--
Floodplain (vic Rdhse)[f]	10/21-22	Good	--	--	11,002	57	--
Geiger Creek[g]	10/22	Good	--	--	6,650	1,175	--
Sushana River[g]	10/20	Good	--	--	698	45	--
Population Estimate[h]			--	--	22,141	--	--
Bearpaw River (mainstem)	10/6	Good	--	--	111	--	--
Moose Creek	10/6	Good	--	--	1,277	--	--

- Continued -

Table 3. (p. 2 of 3)

Stream	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Pink
Lower Tanana River Drainage (Continued)							
Nenana River Drainage							
Seventeen Mile Slough	10/6	Good	--	--	1,270	3,802	--
Lost Slough	10/6	Good	--	--	--	2,511	--
Julius Creek							
Clear Creek Weir Counts[i]	7/12-8/2		165	75	--	--	--
Wood Creek Weir Counts[i]	9/23-10/28		--	--	1,528	2,450	--
Chena River Aerial Survey	8/4	Fair-Poor	1,312	333	--	--	--
Population Estimate[j]			6,404	--	--	--	--
Salcha River Aerial Survey	8/4,8/10	Fair,Good	1,898	3,657	--	--	--
Population Estimate[j,k]			4,771	--	--	--	--
Upper Tanana River Drainage							
Sl immediately dwnstr Delta R[l]	11/6	Poor	--	--	171	2	--
Delta River Aerial Survey	10/16	Poor	--	--	3,200	--	--
Foot Survey	11/6	Good	--	--	20,464	5	--
Population Estimate[h]			--	--	21,180	--	--
Bluff Cabin Slough[g]	10/28	Fair	--	--	9,395	--	--
Bluff Cabin Spring	10/16	Poor	--	--	--	25	--
Clearwater Lake Outlet Slough	10/16	Poor	--	--	1,500	--	--
Clearwater Lake Outlet[k,m]	10/26	Good	--	--	--	4,225	--
Delta Clearwater River[k,m]	10/26	Good	--	--	2,500	22,300	--
Tanana Slough adj to Onemile Sl[g]	10/8	Good	--	--	250	39	--
Billy Creek Slough	10/16	Good	--	--	50	--	--
Beaver Creek[m,n]	7/27	Good	1	--	--	--	--
Chandalar R Sonar Count[d,e]	8/10-9/25		--	--	52,416	--	--
Aerial Survey[e]	8/5		30	--	--	--	--
Porcupine River Drainage							
Black River Drainage[e,o]	8/26-30		--	--	6	--	--
Kevinjik Creek[e,o]	9/15		--	--	1	--	--
Sheenjek River (Aerial)	9/15	Poor	--	--	10,706	--	--
Sonar Estimate[d]	8/25-9/24		--	--	140,086	--	--
Fishing Branch R Weir Count[p]			--	--	48,956	--	--
Charley River[e,m]	8/11		1	--	--	--	--
Yukon Territory Streams							
Fortymile River[e,m]	8/17-22		2	--	--	--	--
Klondike River[p]	8/5		35	--	--	--	--
North Klondike River[p]	8/5		39	--	--	--	--
White River[p]	10/21		--	--	0	--	--
Donjek River[p]	10/21		--	--	0	--	--
Kluane River[p]	10/21		--	--	12,000	--	--
Tincup Creek[p]	8/20	Incomplete	100	--	--	--	--
Koidern River[p]	10/21		--	--	50	--	--

- Continued -

Table 3. (p. 3 of 3)

Stream	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Pink
Yukon Territory Streams (Continued)							
Stewart River							
North McQuesten River[p]	8/18	Good	2	--	--	--	--
Pelly River							
Blind Creek[m,p]	8/19	Poor	1	--	--	--	--
Ross River	8/21	Poor	134	--	--	--	--
Lewis Lake Outlet	8/21	Poor	46	--	--	--	--
Hoole River	8/23	Fair	90	--	--	--	--
Tatchun Creek[g,m]	8/27	Good	159	--	--	--	--
Nordenskiold River[m]	8/23	Good	43	--	--	--	--
Little Salmon River							
ADF&G Aerial Survey	8/21	Good	456	--	--	--	--
DFO Aerial Survey	8/25	Good	468	--	--	--	--
Big Salmon River							
Aerial Survey Above DFO weir	8/23	Good	747	--	--	--	--
DFO Weir Count	7/29-9/2		998	--	--	--	--
Aerial Survey Below DFO weir	8/22-8/23	Fair-Good	374	--	--	--	--
Teslin River Drainage							
Mainstem (below Teslin Lk)[p]			--	--	--	--	--
Mainstem (Above Teslin Lk)	8/24	Poor	19	--	--	--	--
Nisutlin River	8/22-23	Good-Fair	275	--	--	--	--
Wolf River	8/24	Good-Fair	71	--	--	--	--
Swift River	8/24	Good-Fair	74	--	--	--	--
Morley River	8/24	Fair-Poor	83	--	--	--	--
Jennings River	8/24	Poor	16	--	--	--	--
Takhihi River[p]	8/28	Fair	202	--	--	--	--
Whitehorse Fishway Counts[p,q]	7/29-8/30		327	--	--	--	--
Mainstem Yukon River							
Tatchun Creek to Minto[p]	10/26		--	--	728	--	--
Minto to Ft Selkirk[p]	10/26		--	--	5,387	--	--
Population Estimate[j,m,r]			13,493	--	80,876	--	--

a Peak aerial survey counts, carcasses included, unless indicated otherwise.
b Biosonics sonar estimate.
c Preliminary.
d Bendix side scan sonar estimate.
e U.S. Fish and Wildlife Service estimate.
f Combined foot and aerial estimate.
g Foot survey.
h Population estimate based upon replicate foot surveys and streamlife data.
i F.R.E.D. Division estimate.
j Population estimate based upon mark and recapture study.
k Sport Fish Division estimate.
l Habitat Division estimate.
m Boat survey.
n Bureau of Land Management (BLM) estimate.
o Test fishing and radio telemetry.
p Canadian Department of Fisheries and Oceans (DFO) estimate.
q Includes 120 fish (70 females and 50 males) taken for hatchery brood stock.
r Canadian estimates for Yukon Territory streams excluding the Fishing Branch River.

Table 4. Harvest of Yukon River chinook salmon by age, sex, and fishery, 1987.

District	Fishery	Sample Size	Sex	Brood Year and Age Group: 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5	Total
1	Commercial Gill Net	2,023	Female	0	0	1,104	0	34,341	63	3,776	1,313	22	204	40,823
			Male	0	1,998	3,922	32	24,961	360	3,083	1,288	28	150	35,822
			Total	0	1,998	5,026	32	59,299	423	6,860	2,602	50	353	76,643
1	Subsistence Gill Net	0	Female	0	0	105	0	3,261	6	359	125	2	19	3,877
			Male	0	190	372	3	2,370	34	293	122	3	14	3,402
			Total	0	190	477	3	5,631	40	651	247	5	34	7,278
2	Commercial Gill Net	1,628	Female	0	63	229	0	17,409	95	2,796	564	0	35	21,190
			Male	0	2,142	3,629	35	16,708	158	2,866	705	0	26	26,268
			Total	0	2,204	3,858	35	34,117	253	5,660	1,269	0	61	47,458
2	Subsistence Gill Net	0	Female	0	13	48	0	3,619	20	581	117	0	7	4,405
			Male	0	445	754	7	3,473	33	596	147	0	5	5,461
			Total	0	458	802	7	7,093	53	1,177	264	0	13	9,866
3	Commercial Gill Net	0	Female	0	3	10	0	748	4	120	24	0	2	910
			Male	0	92	156	2	718	7	123	30	0	1	1,129
			Total	0	95	166	2	1,466	11	243	55	0	3	2,039
3	Subsistence Gill Net	0	Female	0	6	22	0	1,710	9	275	55	0	3	2,081
			Male	0	210	356	3	1,641	16	281	69	0	3	2,580
			Total	0	216	379	3	3,351	25	556	125	0	6	4,661
4	Comm & Subs GN & FW	377	Female	0	47	304	0	4,278	0	683	76	0	0	5,388
			Male	28	702	702	0	2,191	0	351	123	0	0	4,097
			Total	28	749	1,006	0	6,469	0	1,034	199	0	0	9,485
5	Comm & Subs Gill Net	474	Female	0	32	96	0	6,180	0	1,581	32	0	0	7,921
			Male	0	607	1,182	0	5,286	32	814	128	0	0	8,049
			Total	0	639	1,278	0	11,466	32	2,395	160	0	0	15,970
	Comm & Subs Fish Wheel	528	Female	0	0	96	0	1,637	0	256	0	0	0	1,989
			Male	51	979	1,318	13	1,912	51	58	26	0	0	4,408
			Total	51	979	1,414	13	3,549	51	314	26	0	0	6,397
6	Comm & Subs GN & FW	24	Female											
			Male											
			Total											5,298[a]
Canada	Commercial Gill Net	246	Female	0	309	609	0	3,391	131	1,262	479	0	44	6,225
			Male	0	214	740	0	2,741	87	392	261	0	44	4,479
			Total	0	523	1,349	0	6,132	218	1,654	740	0	88	10,704
Canada	Subsistence Gill Net	0	Female	0	183	361	0	2,005	76	746	285	0	25	3,682
			Male	0	127	436	0	1,619	51	234	152	0	25	2,644
			Total	0	310	797	0	3,625	127	981	436	0	51	6,326
TOTAL HARVEST			Female	0	656	2,984	0	78,579	404	12,435	3,070	24	339	98,491
			Male	79	7,706	13,567	95	63,620	829	9,091	3,051	31	268	98,337
			Total	79	8,362	16,551	95	142,198	1,233	22,526	6,121	55	607	202,125[b]

[a] Small sample size precludes estimation by sex and age class.
[b] Total includes District 6 total catch not estimated by age class.

Table 5. Length (mm) by age and sex of Yukon River chinook salmon commercial and subsistence catch samples, 1987.[a]

Fishery	Sex		Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5
District 1 Commercial Unrestricted Mesh Size Gill Net	Female	Mean Length			741		863	720	900	839		878
		Std Error			13.2		2.3	0	5.4	7.1		25.0
		Sample Size			20		660	1	71	29		4
	Male	Mean Length		567	731	685	859	709	928	856		901
		Std Error		10.1	8.1	0	2.6	12.1	7.9	13.2		23.9
		Sample Size		15	54	1	482	7	60	28		4
District 1 Commercial 6 in (15.2 cm) Maximum Mesh Size Gill Net	Female	Mean Length			754		864		902	828	905	
		Std Error			14.4		3.3		7.5	37.5	0	
		Sample Size			10		219		33	2	1	
	Male	Mean Length		569	689		860	693	940	849	1060	
		Std Error		5.4	7.3		4.6	49.1	11.4	30.0	0	
		Sample Size		49	55		187	3	23	4	1	
District 2 Commercial Unrestricted Mesh Size Gill Net	Female	Mean Length		590	790		861	748	901	848		955
		Std Error		0	20.2		1.7	17.4	5.1	5.9		0
		Sample Size		1	9		581	3	88	19		1
	Male	Mean Length		560	733	555	860	755	946	833		965
		Std Error		14.4	5.9	0	2.4	34.2	7.3	11.5		10.0
		Sample Size		13	79	1	544	5	87	24		2
District 2 Commercial 6 in (15.2 cm) Maximum Mesh Size Gill Net	Female	Mean Length		515			861		916			
		Std Error		0			8.5		21.5			
		Sample Size		1			35		9			
	Male	Mean Length		576	692		853		924			
		Std Error		5.6	9.1		11.9		28.0			
		Sample Size		43	35		38		11			
District 4 Comm & Subs Gill Net	Female	Mean Length			756		870		907	883		
		Std Error			21.3		4.1		7.3	36.6		
		Sample Size			8		140		24	3		
	Male	Mean Length		545	710		879		915	915		
		Std Error		7.5	19.2		7.3		17.0	2.0		
		Sample Size		6	12		72		14	2		
District 4 Comm & Subs Fish Wheel	Female	Mean Length		576	684		869		944			
		Std Error		25.0	38.0		9.0		2.7			
		Sample Size		2	4		30		3			
	Male	Mean Length	372	541	700		856			82		
		Std Error	0	7.4	13.3		20.0			29.2		
		Sample Size	1	22	16		15			3		

Continued

Table 5. (p. 2 of 2)

Fishery	Sex		Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5
District 5	Female	Mean Length		515	718		867		925	830		
Comm & Subs		Std Error		0	40.0		3.2		6.7	0		
Gill Net		Sample Size		1	3		183		47	1		
	Male	Mean Length		574	712		879	645	955	786		
		Std Error		9.6	11.6		5.5	0	11.1	28.4		
		Sample Size		18	35		157	1	24	4		
District 5	Female	Mean Length			744		848		892			
Comm & Subs		Std Error			21.7		4.4		12.7			
Fish Wheel		Sample Size			8		135		21			
	Male	Mean Length	451	560	696	630	829	665	971	740		
		Std Error	61.2	6.1	4.7	0	6.0	31.4	32.6	100		
		Sample Size	4	81	109	1	158	4	5	2		
District 6	Female	Mean Length					802		910			
Commercial		Std Error					16.4		0			
Gill Net		Sample Size					3		1			
	Male	Mean Length			650		821		875	820		
		Std Error			30.0		47.1		68.1	0		
		Sample Size			2		5		3	1		
District 6	Female	Mean Length					863					
Commercial		Std Error					47.5					
Fish Wheel		Sample Size					2					
	Male	Mean Length		550	710		760					
		Std Error		0	18.8		30.0					
		Sample Size		1	4		2					
Canada	Female	Mean Length		621	776		924	683	948	886		1015
Commercial		Std Error		21.6	19.5		5.6	35.3	14.9	18.4		0
Gill Net		Sample Size		7	14		78	3	29	11		1
	Male	Mean Length		629	779		945	770	1030	914		1080
		Std Error		17.8	11.5		12.0	20.0	23.6	32.6		0
		Sample Size		5	17		63	2	9	6		1

[a] Length measured from mid-orbit to fork of tail, except for sample from Canadian commercial fishery, which was measured from tip of snout to fork of tail.

Table 6. Age and sex composition of Yukon River chinook salmon escapement samples, 1987.[a]

River	Aerial Survey Index	Sample Size	Sex	Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5	Total
Andreafsky	4,889	383	Female	0.0	0.0	0.8	0.0	53.2	0.0	1.8	0.3	0.0	0.0	56.1
			Male	0.3	4.7	8.1	0.0	30.5	0.0	0.3	0.0	0.0	0.0	43.9
			Total	0.3	4.7	8.9	0.0	83.7	0.0	2.1	0.3	0.0	0.0	100.0
			SE	1.1	4.1	5.6	0.0	7.2	0.0	2.8	1.1	0.0	0.0	
Anvik	1,174	238	Female	0.0	0.0	3.2	0.0	52.3	0.0	3.2	0.0	0.0	0.0	58.7
			Male	0.0	9.5	9.9	0.0	21.6	0.0	0.5	0.0	0.0	0.0	41.5
			Total	0.0	8.8	12.2	0.0	75.2	0.0	3.8	0.0	0.0	0.0	100.0
			SE	0.0	4.4	5.1	0.0	6.7	0.0	3.0	0.0	0.0	0.0	
Nulato	1,638	155	Female	0.0	0.0	1.3	0.0	59.2	0.0	7.2	0.0	0.7	0.0	68.4
			Male	0.7	8.6	4.6	0.0	16.4	0.0	1.3	0.0	0.0	0.0	31.6
			Total	0.6	8.4	6.5	0.0	75.5	0.0	8.4	0.0	0.6	0.0	100.0
			SE	1.0	3.5	3.1	0.0	5.4	0.0	3.5	0.0	1.0	0.0	
Gisasa	731	96	Female	0.0	0.0	1.0	0.0	58.4	0.0	4.2	1.0	1.0	0.0	65.6
			Male	0.0	4.2	12.5	0.0	17.7	0.0	0.0	0.0	0.0	0.0	34.4
			Total	0.0	4.2	13.5	0.0	76.0	0.0	4.2	1.0	1.0	0.0	100.0
			SE	0.0	2.0	3.4	0.0	4.2	0.0	2.0	1.0	1.0	0.0	
Upper Koyukuk Drainage	256	22[b]	Female	0.0	0.0	4.5	0.0	50.1	0.0	9.1	0.0	0.0	0.0	63.7
			Male	0.0	4.5	13.6	0.0	13.6	0.0	4.5	0.0	0.0	0.0	36.2
			Total	0.0	4.5	18.2	0.0	63.6	0.0	13.6	0.0	0.0	0.0	100.0
			SE	0.0	1.0	1.9	0.0	2.3	0.0	1.6	0.0	0.0	0.0	

Continued

Table 6. (p. 2 of 4)

River	Sample Size	Sex		Brood Year and Age Group: 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5	Total
Chena[c]	560	Female	Percent	0.0	0.2	1.3	0.0	49.6	0.0	6.6	0.4	0.0	0.0	58.0
			Number	0	11	80	0	3,179	0	423	23	0	0	3,716
		Male	Percent	0.0	2.7	11.8	0.0	25.7	0.4	1.4	0.0	0.0	0.0	42.0
			Number	0	172	755	0	1,647	23	91	0	0	0	2,688
		Total	Percent	0.0	2.9	13.0	0.0	75.4	0.4	8.0	0.4	0.0	0.0	100.0
			Number	0	183	835	0	4,826	23	514	23	0	0	6,404
			SE	0	45	91	0	117	16	74	16	0	0	
Salcha[c]	551	Female	Percent	0.0	0.4	2.4	0.0	53.2	0.0	6.9	0.0	0.0	0.0	62.8
			Number	0	19	115	0	2,538	0	329	0	0	0	3,001
		Male	Percent	0.2	5.6	10.2	0.0	20.3	0.0	0.9	0.0	0.0	0.0	37.2
			Number	10	267	487	0	969	0	43	0	0	0	1,776
		Total	Percent	0.2	6.0	12.5	0.0	73.5	0.0	7.8	0.0	0.0	0.0	100.0
			Number	10	286	576	0	3,507	0	372	0	0	0	4,771
			SE	9	48	67	0	90	0	54	0	0	0	
Clear[d]	110	Female	Percent	0.0	0.9	0.0	0.0	50.9	0.0	12.7	0.0	0.0	0.0	64.5
			Number	0	2	0	0	82	0	21	0	0	0	105
		Male	Percent	0.0	9.1	8.2	0.0	15.5	0.9	0.9	0.9	0.0	0.0	35.5
			Number	0	15	13	0	26	2	2	2	0	0	60
		Total	Percent	0.0	10.0	8.2	0.0	66.4	0.9	13.6	0.9	0.0	0.0	100.0
			Number	0	17	13	0	108	2	23	2	0	0	165
			SE	0	5	4	0	7	2	5	2	0	0	
Big Salmon[e]	215	Female	Percent	0.0	0.0	0.5	0.0	31.6	0.0	11.6	5.1	0.0	2.8	51.6
			Number	0	0	5	0	315	0	116	51	0	28	515
		Male	Percent	0.0	0.5	6.0	0.0	29.8	0.5	7.0	3.7	0.0	0.9	48.4
			Number	0	5	60	0	297	5	70	37	0	9	483
		Total	Percent	0.0	0.5	6.5	0.0	61.4	0.5	18.6	8.8	0.0	3.7	100.0
			Number	0	5	65	0	612	5	186	88	0	37	998
			SE	0	5	17	0	33	5	27	19	0	13	

Continued

Table 6. (p. 3 of 4)

River	Aerial Survey Index	Sample Size	Sex	Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5	Total
Little Salmon	456	180	Female	0.0	0.0	2.9	0.0	54.9	0.0	6.3	0.6	0.0	0.0	64.7
			Male	0.0	7.4	7.4	0.0	16.6	0.0	2.9	1.1	0.0	0.0	35.4
			Total	0.0	7.2	10.0	0.0	71.1	0.0	10.0	1.7	0.0	0.0	100.0
			SE	0.0	3.5	4.0	0.0	6.1	0.0	4.0	1.7	0.0	0.0	
Nisutlin	275	24	Female	0.0	0.0	0.0	0.0	29.2	0.0	12.5	16.7	0.0	4.2	62.6
			Male	0.0	0.0	0.0	0.0	16.7	4.2	0.0	16.7	0.0	0.0	37.6
			Total	0.0	0.0	0.0	0.0	45.8	4.2	12.5	33.3	0.0	4.2	100.0
			SE	0.0	0.0	0.0	0.0	2.5	1.0	1.7	2.4	0.0	1.0	
Tatchun	159	57	Female	0.0	0.0	3.5	0.0	38.6	0.0	17.5	0.0	0.0	0.0	59.6
			Male	0.0	10.5	15.8	0.0	12.3	0.0	0.0	1.8	0.0	0.0	40.4
			Total	0.0	10.5	19.3	0.0	50.9	0.0	17.5	1.8	0.0	0.0	100.0
			SE	0.0	2.3	3.0	0.0	3.8	0.0	2.9	1.0	0.0	0.0	
Teslin[f]		17	Female	0.0	0.0	0.0	0.0	29.3	0.0	17.6	5.9	0.0	5.9	58.7
			Male	0.0	11.8	11.8	0.0	5.9	0.0	5.9	5.9	0.0	0.0	41.3
			Total	0.0	11.8	11.8	0.0	35.3	0.0	23.5	11.8	0.0	5.9	100.0
			SE	0.0	1.4	1.4	0.0	2.0	0.0	1.8	1.4	0.0	1.0	
Morley	83	28	Female	0.0	0.0	0.0	0.0	36.9	0.0	14.8	7.4	0.0	3.7	62.8
			Male	0.0	3.7	7.4	0.0	7.4	7.4	3.7	7.4	0.0	0.0	37.0
			Total	0.0	3.6	10.7	0.0	42.9	7.1	17.9	14.3	0.0	3.6	100.0
			SE	0.0	1.0	1.7	0.0	2.7	1.4	2.1	1.9	0.0	1.0	
Nordenskjold[f]		30	Female	0.0	0.0	0.0	0.0	66.6	0.0	6.7	0.0	0.0	0.0	73.4
			Male	0.0	0.0	6.7	0.0	20.0	0.0	0.0	0.0	0.0	0.0	26.7
			Total	0.0	0.0	6.7	0.0	86.7	0.0	6.7	0.0	0.0	0.0	100.0
			SE	0.0	0.0	1.4	0.0	1.9	0.0	1.4	0.0	0.0	0.0	

Continued

Table 6. (p. 4 of 4)

River	Aerial Survey Index	Sample Size	Sex	Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5	Total
Mainstem Yukon[f]		23	Female	0.0	0.0	0.0	0.0	17.4	0.0	8.7	0.0	0.0	0.0	26.1
			Male	0.0	0.0	0.0	0.0	43.5	0.0	26.1	4.3	0.0	0.0	73.9
			Total	0.0	0.0	0.0	0.0	60.9	0.0	34.8	4.3	0.0	0.0	100.0
			SE	0.0	0.0	0.0	0.0	2.4	0.0	2.3	1.0	0.0	0.0	

a All samples collected from carcasses and speared live spawnouts except: 15 beach seine samples from the Andreafsky River; 10 gill net samples from the Nulato River; 22 gill net samples from the Gisasa River; 21 snagged samples from Upper Koyukuk tributaries; all samples from live fish passing through weirs at Clear Creek and Big Salmon River; and an unknown number of gill net samples from the Teslin and mainstem Yukon Rivers. Aerial survey escapement index counts and sample composition percentages are presented for all areas except as noted for streams with total population estimates where age composition is presented in numbers of fish.

b Includes 13 samples from the Jim River, 8 samples from Henshaw Creek, and 1 sample from the South Fork Koyukuk River.

c Total population estimated from mark and recapture studies.

d Total population of 165 estimated from weir count of 142 fish. Age composition includes 4 marked age-0.5 hatchery returns from the 1981 brood year which were aged as 1.5 from scales, and an unknown number of unmarked hatchery returns assigned ages according to scale patterns one year younger than actual ages.

e Total population from weir count.

f No aerial survey conducted.

Table 7. Length (mm) by age and sex of Yukon River chinook salmon escapement samples, 1987.[a]

River	Sex		Brood Year and Age Group									
			1984	1983	1982		1981		1980		1979	
			1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5
Andreafsky	Female	Mean Length			743		852		880	930		
		Std Error			47.5		3.8		14.2	0		
		Sample Size			2		199		7	1		
	Male	Mean Length	415	536	717		828		960			
		Std Error	0	16.3	14.2		6.6		0			
		Sample Size	1	17	28		107		1			
Anvik	Female	Mean Length			746		842		895			
		Std Error			25.8		4.9		20.6			
		Sample Size			7		116		7			
	Male	Mean Length		531	685		838		1000			
		Std Error		12.9	19.1		8.7		0			
		Sample Size		21	22		48		1			
Nulato	Female	Mean Length			830		869		908		930	
		Std Error			0		6.1		16.0		0	
		Sample Size			1		79		11		1	
	Male	Mean Length	530	526	728		855		855			
		Std Error	0	15.5	12.2		11.3		35.0			
		Sample Size	1	13	6		24		2			
Gisasa	Female	Mean Length					870		925	900	950	
		Std Error					6.8		55.0	0	0	
		Sample Size					40		2	1	1	
	Male	Mean Length		495	718		808					
		Std Error		41.3	17.5		13.2					
		Sample Size		4	12		15					
Upper Koyukuk Drainage[b]	Female	Mean Length			735		855		928			
		Std Error			0		14.9		37.5			
		Sample Size			1		11		2			
	Male	Mean Length		510	758		868		885			
		Std Error		0	26.8		49.5		0			
		Sample Size		1	3		3		1			
Chena	Female	Mean Length		870	732		868		910	863		
		Std Error		0	23.7		2.6		8.6	2.5		
		Sample Size		1	7		278		37	2		
	Male	Mean Length		542	701		853	693	938			
		Std Error		9.6	5.9		6.3	22.5	31.9			
		Sample Size		15	66		144	2	8			

Continued

Table 7. (p. 2 of 3)

River	Sex		Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5
Salcha	Female	Mean Length		565	749		868		906			
		Std Error		0	17.1		2.8		8.0			
		Sample Size		1	13		293		38			
	Male	Mean Length	445	566	695		858		875			
		Std Error	0	15.6	10.2		8.6		64.3			
		Sample Size	1	31	56		111		5			
Clear Creek	Female	Mean Length		775			817		906			
		Std Error		0			5.0		17.0			
		Sample Size		1			56		14			
	Male	Mean Length		570	653		805	635	953	940		
		Std Error		15.9	22.9		12.3	0	0	0		
		Sample Size		10	9		17	1	1	1		
Little Salmon	Female	Mean Length			725		839		877	825		
		Std Error			30.0		3.5		19.9	0		
		Sample Size			5		96		11	1		
	Male	Mean Length		564	699		868		973	870		
		Std Error		14.5	7.6		13.2		24.1	50.0		
		Sample Size		13	13		29		5	2		
Nisutlin	Female	Mean Length					817		847	803		880
		Std Error					12.3		29.1	21.0		0
		Sample Size					7		3	4		1
	Male	Mean Length					825	690		763		
		Std Error					23.3	0		37.9		
		Sample Size					4	1		4		
Tatchun Creek	Female	Mean Length			745		829		843			
		Std Error			5.0		7.6		18.9			
		Sample Size			2		22		10			
	Male	Mean Length		567	627		813			770		
		Std Error		14.3	18.6		13.4			0		
		Sample Size		6	9		7			1		
Teslin	Female	Mean Length					847		913	820		870
		Std Error					31.4		6.0	0		0
		Sample Size					5		3	1		1
	Male	Mean Length		570	653		740		1065	885		
		Std Error		35.0	27.5		0		0	0		
		Sample Size		2	2		1		1	1		

Continued

Table 7. (p. 3 of 3)

River	Sex		Brood Year and Age Group 1984 1.1	1983 1.2	1982 1.3	1982 2.2	1981 1.4	1981 2.3	1980 1.5	1980 2.4	1979 1.6	1979 2.5
Morley	Female	Mean Length					809		886	763		815
		Std Error					8.2		7.7	42.5		0
		Sample Size					10		4	2		1
	Male	Mean Length		530	665		875	680	940	878		
		Std Error		0	5.0		15.0	0	0	32.5		
		Sample Size		1	2		2	2	1	2		
Nordenskjold	Female	Mean Length					816		818			
		Std Error					9.0		2.5			
		Sample Size					20		2			
	Male	Mean Length			705		895					
		Std Error			10.0		23.2					
		Sample Size			2		6					
Mainstem Yukon	Female	Mean Length					863		935			
		Std Error					16.5		25.0			
		Sample Size										
	Male	Mean Length					898		930	990		
		Std Error					10.9		19.2	0		
		Sample Size					10		6	1		
Big Salmon	Female	Mean Length			770		928		994	919		980
		Std Error			0.0		6.3		9.8	15.8		28.4
		Sample Size			1		68		25	11		6
	Male	Mean Length		640	849		919	780	1062	903		1045
		Std Error		0	75.6		11.2	0	11.2	29.0		75.0
		Sample Size		1	13		64	1	15	8		2

[a] All samples collected from carcasses and speared live spawnouts except: 15 beach seine samples from the Andreafsky River; 10 gill net samples from the Nulato River; 22 gill net samples from the Gisasa River; 21 snagged samples from Upper Koyukuk tributaries; all samples from live fish passing through weirs at Clear Creek and Big Salmon River; and an unknown number of gill net samples from the Teslin and mainstem Yukon Rivers. Aerial survey escapement index counts and sample composition percentages are presented for all areas except as noted for streams with total population estimates where age composition is presented in numbers of fish.

[b] Includes 13 samples from the Jim River, 8 samples from Henshaw Creek, and 1 sample from the South Fork Koyukuk River.

Table 8. Harvest of Yukon River summer chum salmon by age, sex, and fishery, 1987.

District	Fishery	Sample Size	Sex	Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5	1980 0.6	Total
1	Commercial Gill Net	1,601	Female	47	47,233	40,405	10,190	0	97,875
			Male	0	71,667	42,412	10,887	59	125,025
			Total	47	118,900	82,817	21,076	59	222,898
1	Subsistence Gill Net	0	Female	6	6,518	5,576	1,406	0	13,507
			Male	0	9,890	5,853	1,502	8	17,253
			Total	6	16,408	11,429	2,908	8	30,760
2	Commercial Gill Net	0	Female	37	37,057	31,700	7,995	0	76,788
			Male	0	56,227	33,275	8,541	46	98,089
			Total	37	93,284	64,975	16,535	46	174,876
2	Subsistence Gill Net	0	Female	7	7,021	6,006	1,515	0	14,549
			Male	0	10,653	6,305	1,618	9	18,585
			Total	7	17,675	12,311	3,133	9	33,134
3	Commercial Gill Net	0	Female	1	742	635	160	0	1,537
			Male	0	1,126	666	171	1	1,964
			Total	1	1,868	1,301	331	1	3,501
3	Subsistence Gill Net	0	Female	1	882	754	190	0	1,827
			Male	0	1,338	792	203	1	2,334
			Total	1	2,220	1,546	393	1	4,161
4	Commercial Fish Wheel	118	Female	0	47,110	6,852	0	0	53,963
			Male	0	35,975	9,422	1,713	0	47,110
			Total	0	83,085	16,274	1,713	0	101,073
4	Subsistence Fish Wheel	203	Female	659	56,023	19,114	659	0	76,454
			Male	659	38,227	16,477	1,977	0	57,341
			Total	1,318	94,250	35,591	2,636	0	133,795
6	Commercial Fish Wheel	262	Female	406	3,098	1,807	369	0	5,679
			Male	148	2,913	627	295	0	3,983
			Total	554	6,011	2,434	664	0	9,662
6	Subsistence Fish Wheel	0	Female	860	6,567	3,831	782	0	12,039
			Male	313	6,176	1,329	625	0	8,443
			Total	1,173	12,743	5,160	1,407	0	20,482
TOTAL HARVEST			Female	2,024	212,251	116,680	23,266	0	354,218
			Male	1,120	234,192	117,158	27,532	124	380,127
			Total	3,144	446,444	233,838	50,796	124	734,342 [a]

[a] Total does not include the following harvests due to lack of appropriate sample data:

District 4 Commercial Gill Net	8,247
District 4 Subsistence Gill Net	23,611
District 5 Commercial Gill Net	44
District 5 Subsistence Gill Net	2,485
District 5 Commercial Fish Wheel	318
District 5 Subsistence Fish Wheel	22,365
District 6 Commercial Gill Net	948
District 6 Subsistence Gill Net	5,121
Total	63,139

Table 9. Length (mm) by age and sex of Yukon River summer chum salmon commercial and subsistence catch samples, 1987.[a]

Fishery	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5	1980 0.6
District 1 Commercial Unrestricted Mesh Size Gill Net	Female	Mean Length	595	557	580	591	0
		Std Error	0.0	1.6	1.8	4.1	0.0
		Sample Size	1	179	177	45	0
	Male	Mean Length	0	577	608	621	640
		Std Error	0.0	1.5	2.0	3.6	0.0
		Sample Size	0	241	226	53	1
District 1 Commercial 6 in (15.2 cm) Maximum Mesh Size Gill Net	Female	Mean Length	0	571	584	583	0
		Std Error	0.0	6.7	2.9	4.0	0.0
		Sample Size	0	158	117	29	0
	Male	Mean Length	0	578	613	608	0
		Std Error	0.0	4.6	9.6	6.5	0.0
		Sample Size	0	229	112	30	0
District 4 Commercial Fish Wheel	Female	Mean Length	0	552	574	0	0
		Std Error	0.0	3.4	8.6	0.0	0.0
		Sample Size	0	55	8	0	0
	Male	Mean Length	0	584	614	647	0
		Std Error	0.0	3.8	9.2	17.5	0.0
		Sample Size	0	42	11	2	0
District 4 Subsistence Fish Wheel	Female	Mean Length	562	554	587	548	0
		Std Error	0.0	3.1	5.9	0.0	0.0
		Sample Size	1	85	29	1	0
	Male	Mean Length	529	582	627	612	0
		Std Error	0.0	4.9	6.3	2.4	0.0
		Sample Size	1	58	25	3	0
District 6 Commercial Fish Wheel	Female	Mean Length	553	558	581	615	0
		Std Error	5.8	3.3	4.0	8.8	0.0
		Sample Size	11	84	49	10	0
	Male	Mean Length	546	574	596	628	0
		Std Error	14.2	3.5	9.0	10.4	0.0
		Sample Size	4	79	17	8	0

[a] Length measured from mid-orbit to fork of tail.

Table 10. Age and sex composition of Yukon River summer chum salmon escapement samples, 1987.[a]

Location and Estimation Method	Escapement Estimate	Sample Size	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5	Total
E F Andreafsky R[b] Tower Count	45,221	362	Female	Percent of Sample	0.3	18.8	37.6	1.9	58.6
				Number in Escapement	125	8,495	16,989	874	26,483
			Male	Percent of Sample	0.6	9.9	29.0	1.9	41.4
				Number in Escapement	250	4,497	13,117	874	18,738
			Total	Percent of Sample	0.8	28.7	66.6	3.9	100.0
				Number in Escapement	375	12,992	30,106	1,748	45,221
				Standard Error	216	1,077	1,123	459	
Anvik River[b] Sonar Count	455,876	545	Female	Percent of Sample	1.8	43.7	18.3	1.3	65.1
				Number in Escapement	8,365	199,080	83,647	5,855	296,947
			Male	Percent of Sample	0.0	22.9	10.3	1.7	34.9
				Number in Escapement	0	104,559	46,842	7,528	158,929
			Total	Percent of Sample	1.8	66.6	28.6	2.9	100.0
				Number in Escapement	8,365	303,639	130,489	13,383	455,876
				Standard Error	2,623	9,218	8,835	3,299	
Innoko River[c]	(No Survey)	27	Female	Percent of Sample	0.0	11.1	7.4	0.0	18.5
			Male	Percent of Sample	3.7	66.7	7.4	3.7	81.5
			Total	Percent of Sample	3.7	77.8	14.8	3.7	100.0
				Standard Error	3.7	8.2	7.0	3.7	
Nulato River[d] Peak Aerial Survey Index of Abundance	11,257	196	Female	Percent of Sample	1.0	26.5	16.8	0.5	44.9
			Male	Percent of Sample	0.5	31.1	21.4	2.0	55.1
			Total	Percent of Sample	1.5	57.7	38.3	2.6	100.0
				Standard Error	0.9	3.5	3.5	1.1	
Gisasa River[e]	2,123	31	Female	Percent of Sample	6.5	29.0	16.1	0.0	51.6
			Male	Percent of Sample	3.2	22.6	22.6	0.0	48.4
			Total	Percent of Sample	9.7	51.6	38.7	0.0	100.0
				Standard Error	5.4	9.1	8.9	0.0	
Henshaw Creek[f]	35	38	Female	Percent of Sample	2.6	55.3	7.9	0.0	65.8
			Male	Percent of Sample	2.6	18.4	7.9	5.3	34.2
			Total	Percent of Sample	5.3	73.7	15.8	5.3	100.0
				Standard Error	3.7	7.2	6.0	3.7	
Jim River[f]	401	83	Female	Percent of Sample	1.2	28.9	7.2	0.0	37.3
			Male	Percent of Sample	2.4	45.8	14.5	0.0	62.7
			Total	Percent of Sample	3.6	74.7	21.7	0.0	100.0
				Standard Error	2.1	4.8	4.6	0.0	

[a] Only the sample composition is presented for those areas with only indices of abundance.
[b] Samples collected by beach seine.
[c] Samples collected by 4 in (10.2 cm) mesh set gill nets.
[d] Samples collected by 8-1/2 in (21.6 cm) mesh gill nets, from carcasses, and by snagging gear.
[e] Samples collected from carcasses.
[f] Samples collected by 8-1/2 in (21.6 cm) mesh gill nets and by snagging gear.

Table 11. Length (mm) by age and sex of Yukon River summer chum salmon escapement samples, 1987.[a]

Location	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5
East Fork Andreafsky River[b]	Female	Mean Length	530	538	563	576
		Std. Error	0.0	2.9	2.4	9.8
		Sample Size	1	68	136	7
	Male	Mean Length	538	574	605	605
		Std. Error	22.5	6.0	2.8	12.7
		Sample Size	2	36	105	7
Anvik River[b]	Female	Mean Length	524	542	570	582
		Std. Error	7.9	3.8	5.6	4.9
		Sample Size	10	237	99	7
	Male	Mean Length	0	570	616	627
		Std. Error	0.0	4.5	4.2	11.7
		Sample Size	0	125	56	9
Nulato River[c]	Female	Mean Length	560	526	570	0
		Std. Error	0.0	5.1	6.0	0.0
		Sample Size	1	17	12	0
	Male	Mean Length	525	571	608	625
		Std. Error	0.0	4.2	7.4	5.0
		Sample Size	1	39	26	2
Gisasa River[d]	Female	Mean Length	523	536	570	0
		Std. Error	2.5	8.3	19.6	0.0
		Sample Size	2	9	4	0
	Male	Mean Length	530	571	625	0
		Std. Error	0.0	12.6	13.7	0.0
		Sample Size	1	7	7	0
Innoko River[e]	Female	Mean Length	0	521	610	0
		Std. Error	0.0	29.5	30.0	0.0
		Sample Size	0	3	2	0
	Male	Mean Length	560	587	626	615
		Std. Error	0.0	7.2	9.0	0.0
		Sample Size	1	18	2	1

Continued

Table 11. (p 2 of 2)

Location	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5
Henshaw Creek[f]	Female	Mean Length	545	538	555	0
		Std. Error	0.0	5.1	14.4	0.0
		Sample Size	1	21	3	0
	Male	Mean Length	550	558	605	568
		Std. Error	0.0	9.9	10.4	42.5
		Sample Size	1	7	3	2
Jim River[f]	Female	Mean Length	530	550	578	0
		Std. Error	0.0	4.1	6.9	0.0
		Sample Size	1	24	6	0
	Male	Mean Length	545	576	610	0
		Std. Error	10.0	4.2	6.8	0.0
		Sample Size	2	38	12	0

[a] Length measured from mid-orbit to fork of tail.
[b] Samples collected by beach seine.
[c] Samples collected by 8-1/2 in (21.6 cm) mesh gill nets and from carcasses.
[d] Samples collected from carcasses.
[e] Samples collected by 4 in (10.2 cm) mesh set gill nets.
[f] Samples collected by 8-1/2 in (21.6 cm) mesh gill nets and by hook and line snagging gear.

Table 12. Harvest of Yukon River fall chum salmon by age, sex, and fishery, 1987.

District	Fishery	Sample Size	Sex	Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5	1980 0.6	Total
1	Subsistence Gill Net	0	Female	41	7,735	1,780	123	14	9,692
			Male	82	7,379	1,232	82	0	8,775
			Total	123	15,113	3,012	205	14	18,467
2	Subsistence Gill Net	0	Female	30	5,635	1,297	90	10	7,061
			Male	60	5,376	898	60	0	6,393
			Total	90	11,011	2,194	150	10	13,454
4	Subsistence Fish Wheel	0	Female	494	15,367	3,455	33	0	16,349
			Male	296	13,426	4,607	33	0	18,362
			Total	790	28,793	8,062	66	0	37,711
5	Subsistence Fish Wheel	1,080	Female	4,416	30,481	6,570	215	0	41,682
			Male	4,739	58,377	11,309	215	0	74,640
			Total	9,155	88,858	17,879	431	0	116,323
Canada	Commercial Gill Net	433	Female	282	8,754	2,057	0	0	11,093
			Male	1,009	21,905	6,334	0	0	29,248
			Total	1,291	30,659	8,391	0	0	40,341
Canada	Subsistence Gill Net	0	Female	27	847	199	0	0	1,073
			Male	98	2,120	613	0	0	2,831
			Total	125	2,967	812	0	0	3,904
TOTAL HARVEST			Female	5,290	68,819	15,358	461	24	86,950
			Male	6,284	108,583	24,993	390	0	140,249
			Total	11,574	177,401	40,350	852	24	230,200[a]

[a] Total drainage harvest by age and sex does not include the following fisheries and catches due to lack of appropriate sample data:

District 3 Subsistence Gill Net	2,853
District 4 Subsistence Gill Net	4,190
District 5 Subsistence Gill Net	12,925
District 6 Subsistence Gill Net	3,991
District 6 Subsistence Fish Wheel	35,920
Total Unapportioned Harvest	59,879

Table 13. Length (mm) by age and sex of Yukon River fall chum salmon commercial and subsistence catch samples, 1987.[a]

Fishery	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5
District 5 Subsistence Fish Wheel	Female	Mean Length	574	586	604	625
		Std Error	4.4	1.6	3.7	10.0
		Sample Size	41	283	61	2
	Male	Mean Length	596	610	637.5	652
		Std Error	3.7	1.2	2.8	22.5
		Sample Size	44	542	105	2
Yukon Territory Commercial Gillnet (mesh size unknown)	Female	Mean Length	665	638	657	
		Sample Size	3	94	22	
	Male	Mean Length	663	670	693	
		Sample Size	11	235	68	

[a] Length measured from mid-orbit to fork of tail for District 5 samples, and from tip of snout to fork of tail for Yukon Territory samples.

Table 14. Age and sex composition of Yukon River fall chum salmon escapement to major spawning areas, 1987.

Location and Estimation Method	Escapement Estimate	Sample Size	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5	Total
Toklat River[a] Expanded Multiple Surveys	22,141	430	Female	Percent of Sample	1.4	35.3	6.7	0.5	44.0
				Number in Escapement	309	7,827	1,493	103	9,732
			Male	Percent of Sample	3.3	43.7	9.1	0.0	56.0
				Number in Escapement	721	9,680	2,008	0	12,409
			Combined	Percent of Sample	4.7	79.1	15.8	0.5	100.0
				Number in Escapement	1,030	17,507	3,501	103	22,141
				Standard Error	225	435	390	73	
Delta River[a] Expanded Multiple Surveys	21,180	429	Female	Percent of Sample	0.9	33.6	12.6	0.2	47.3
				Number in Escapement	198	7,109	2,666	49	10,022
			Male	Percent of Sample	0.9	37.1	14.0	0.7	52.7
				Number in Escapement	198	7,850	2,962	148	11,158
			Combined	Percent of Sample	1.9	70.6	26.6	0.9	100.0
				Number in Escapement	396	14,959	5,628	197	21,180
				Standard Error	138	466	452	98	
Bluff Cabin Slough[b] Foot Survey	9,395	145	Female	Percent of Sample	0.7	39.3	0.0	0.0	40.0
			Male	Percent of Sample	0.7	56.6	2.8	0.0	60.0
			Combined	Percent of Sample	1.4	95.9	2.8	0.0	100.0
				Standard Error	1.0	1.7	1.4	0.0	
Chandalar River[c] Sonar Count	52,416	134	Female	Percent of Sample	0.0	11.9	11.2	0.7	23.9
				Number in Escapement	0	6,259	5,867	391	12,517
			Male	Percent of Sample	0.0	43.3	30.6	2.2	76.1
				Number in Escapement	0	22,688	16,038	1,173	39,899
			Combined	Percent of Sample	0.0	55.2	41.8	3.0	100.0
				Number in Escapement	0	28,946	21,905	1,565	52,416
				Standard Error	0.0	2,260	2,242	773	
Sheenjek River[d] Sonar Count	140,086	430	Female	Percent of Sample	1.4	59.1	5.1	0.7	66.3
				Number in Escapement	1,955	82,748	7,167	977	92,847
			Male	Percent of Sample	0.7	30.7	2.1	0.2	33.7
				Number in Escapement	977	43,003	2,932	326	47,238
			Combined	Percent of Sample	2.1	89.8	7.2	0.9	100.0
				Number in Escapement	2,932	125,752	10,099	1,303	140,086
				Standard Error	968	2,050	1,749	649	
Fishing Branch River[e] Weir Count	48,956	781	Female	Percent of Sample	2.6	46.1	7.0	0.3	42.0
				Number in Escapement	1,273	22,569	3,427	147	20,580
			Male	Percent of Sample	2.2	37.3	4.2	0.4	58.0
				Number in Escapement	1,077	18,261	2,056	196	28,376
			Combined	Percent of Sample	4.8	83.4	11.2	0.7	100.0
				Number in Escapement	2,350	40,829	5,483	343	48,956
				Standard Error	375	652	553	146	
Mainstem Yukon River[f] Minto and Tatchun Cr. Areas Peak Aerial Survey Index of Abundance	6,115	143	Female	Percent of Sample	0.0	60.8	3.5	0.0	64.3
			Male	Percent of Sample	0.0	30.8	4.9	0.0	35.7
			Combined	Percent of Sample	0.0	91.6	8.4	0.0	100.0
				Standard Error	0.0	2.3	2.3	0.0	
Kluane River[f] Peak Aerial Survey Index of Abundance	12,000	143	Female	Percent of Sample	0.0	41.3	6.3	0.0	47.6
			Male	Percent of Sample	0.0	42.0	10.5	0.0	52.4
			Combined	Percent of Sample	0.0	83.2	16.8	0.0	100.0
				Standard Error	0.0	3.1	3.1	0.0	

[a] All samples were from carcasses except 150 samples taken from beach seine catches.
[b] All sampled fish captured using spears and dip-nets.
[c] All samples from 5-5/8 in (14.3 cm) mesh set gill net catches.
[d] All samples collected from beach seine catches.
[e] All samples collected from live fish passing through a weir.
[f] All samples collected from unspecified mesh size gill net catches.

Table 15. Length (mm) by age and sex of Yukon River fall chum salmon escapement samples, 1987.[a]

Location	Sex		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5
Toklat River[b]	Female	Mean Length	536	562	591	633
		Std Error	17.8	2.1	5.2	2.5
		Sample Size	6	152	29	2
	Male	Mean Length	541	582	612	0
		Std Error	9.3	2.1	5.3	0.0
		Sample Size	14	188	39	0
Delta River[b]	Female	Mean Length	571	586	615	620
		Std Error	28.3	2.2	4.0	0.0
		Sample Size	4	144	54	1
	Male	Mean Length	585	607	637	642
		Std Error	17.4	1.9	3.5	4.4
		Sample Size	4	159	60	3
Bluff Cabin Slough[c]	Female	Mean Length	525	564	0	0
		Std Error	0.0	3.5	0.0	0.0
		Sample Size	1	57	0	0
	Male	Mean Length	620	593	626	0
		Std Error	0.0	2.5	6.3	0.0
		Sample Size	1	82	4	0
Chandalar River[d]	Female	Mean Length	0	608	635	700
		Std Error	0.0	0.6	0.5	0.0
		Sample Size	0	16	15	1
	Male	Mean Length	0	627	651	660
		Std Error	0.0	0.4	0.4	1.2
		Sample Size	0	58	41	3
Sheenjek River[e]	Female	Mean Length	599	597	616	597
		Std Error	9.8	1.5	6.6	14.8
		Sample Size	6	254	22	3
	Male	Mean Length	630	628	648	655
		Std Error	35.0	2.5	8.3	0.0
		Sample Size	3	132	9	1
Fishing Branch R.[f,g]	Female	Mean Length	0	637	666	0
		Std Error	0.0	3.8	7.4	0.0
		Sample Size	0	55	11	0
	Male	Mean Length	0	677	702	0
		Std Error	0.0	3.0	9.9	0.0
		Sample Size	0	78	13	0
Mainstem Yukon R.[f,h] Minto and Tatchun Cr. Areas	Female	Mean Length	0	624	634	0
		Std Error	0.0	4.5	6.5	0.0
		Sample Size	0	87	5	0
	Male	Mean Length	0	655	693	0
		Std Error	0.0	4.4	13.8	0.0
		Sample Size	0	44	7	0
Kluane River[f,h]	Female	Mean Length	514	629	658	667
		Std Error	5.8	5.3	5.4	3.1
		Sample Size	20	360	55	2
	Male	Mean Length	689	674	700	695
		Std Error	5.0	5.7	5.7	6.1
		Sample Size	17	291	33	3

a Length measured from mid-orbit to fork of tail, except as noted.
b All samples were from carcasses except 150 samples taken from beach seine catches.
c All sampled fish captured using spears and dip-nets.
d All samples from 5-5/8 in (14.3 cm) mesh set gill net catches.
e All samples collected from beach seine catches.
f Length is tip-of-snout to fork-of-tail.
g All samples collected from live fish passing through a weir.
h All samples collected from unspecified mesh size gill net catches.

Table 16. Delta Clearwater River coho salmon escapement sample by age, sex, and length (mm), 1987.[a]

Sex		Brood Year and Age Group 1984 1.1	1983 2.1	1982 3.1	Total
Female	Sample Size	33	70	3	106
	Percent	14.9	31.7	1.4	48.0
	Mean Length	533	554	557	
	Standard Error	5	3	9	
Male	Sample Size	28	84	3	115
	Percent	12.7	38.0	1.4	52.0
	Mean Length	541	556	553	
	Standard Error	7	4	9	
Total	Sample Size	61	154	6	221
	Percent	27.6	69.7	2.7	100.0
	Standard Error	3.0	3.1	1.1	

[a] Samples collected by carcass survey on 12/04. Length measured from mid-orbit to fork of tail.

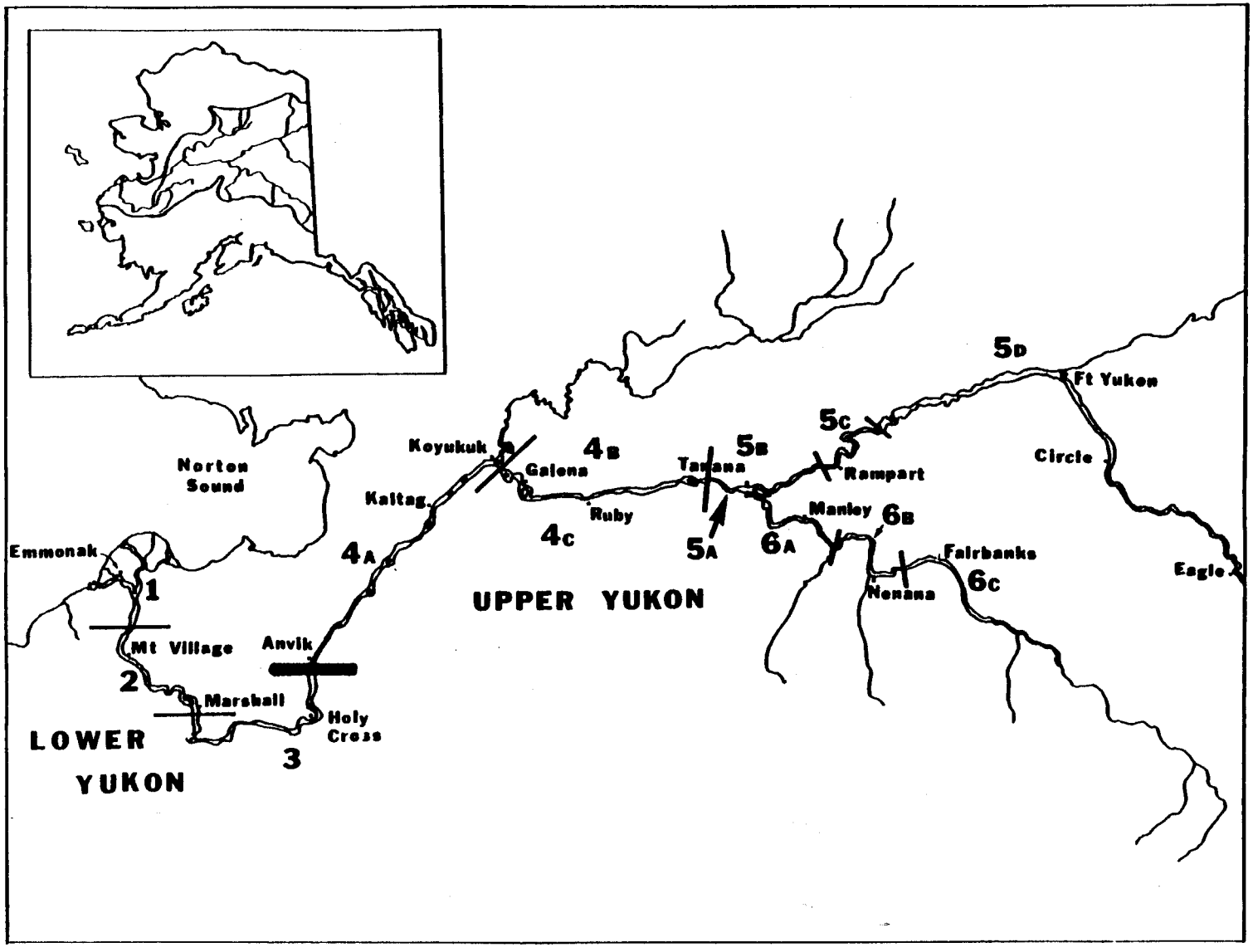

Figure 1. Alaskan portion of the Yukon River, showing fishing district boundries.

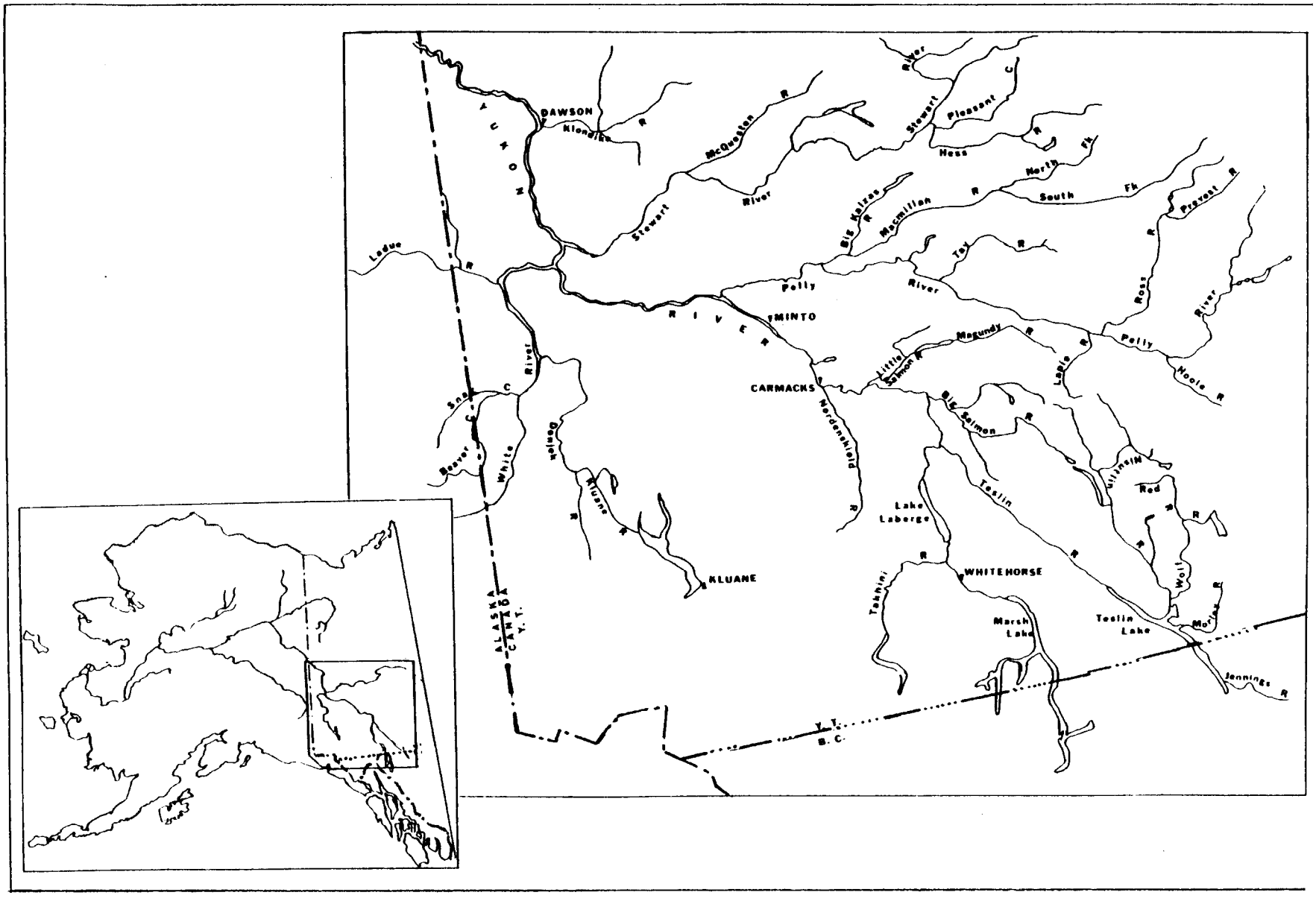

Figure 2. Canadian portion of the Yukon River.

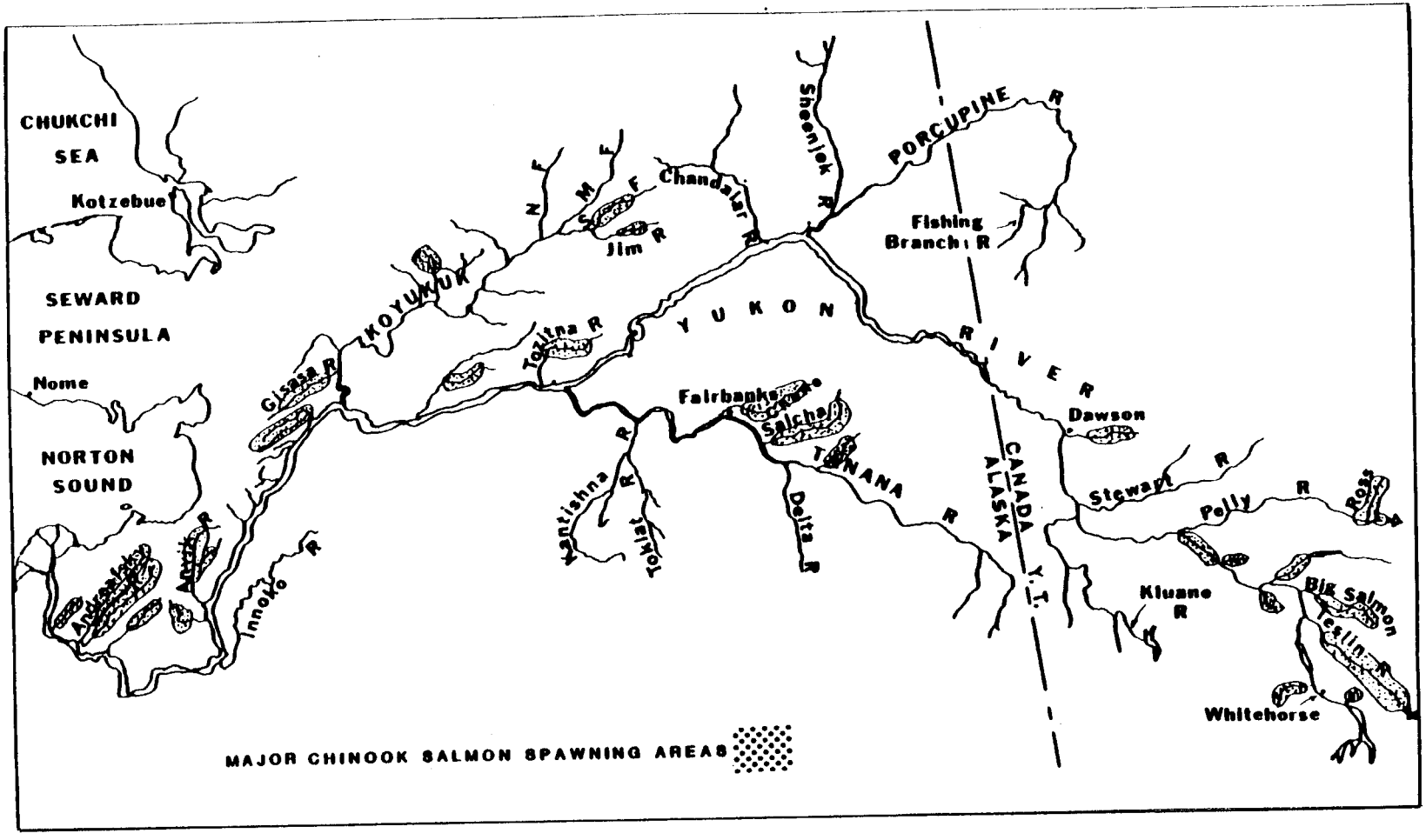

Figure 3. Chinook salmon spawning areas in the Yukon River drainage.

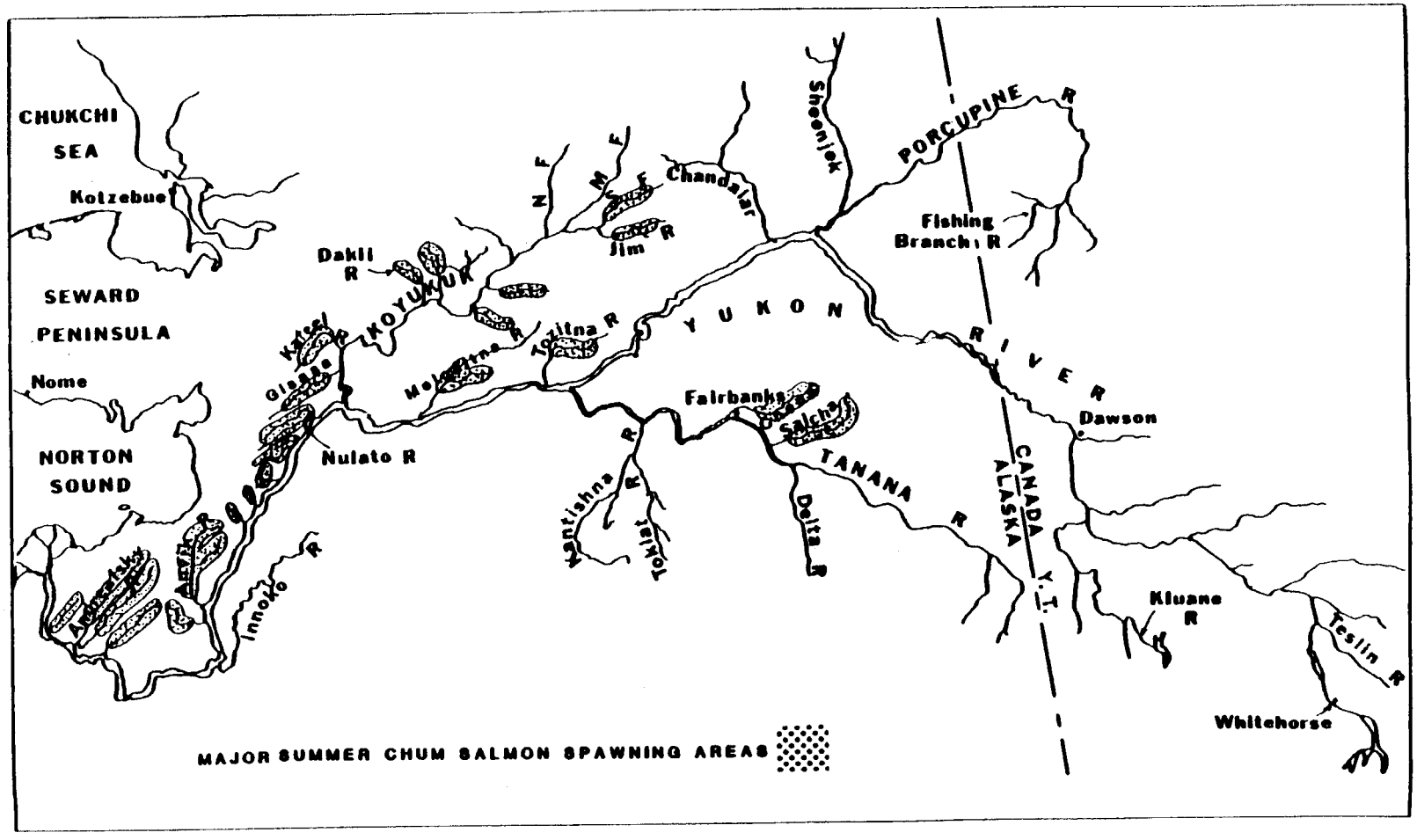

Figure 4. Summer chum salmon spawning areas in the Yukon River drainage.

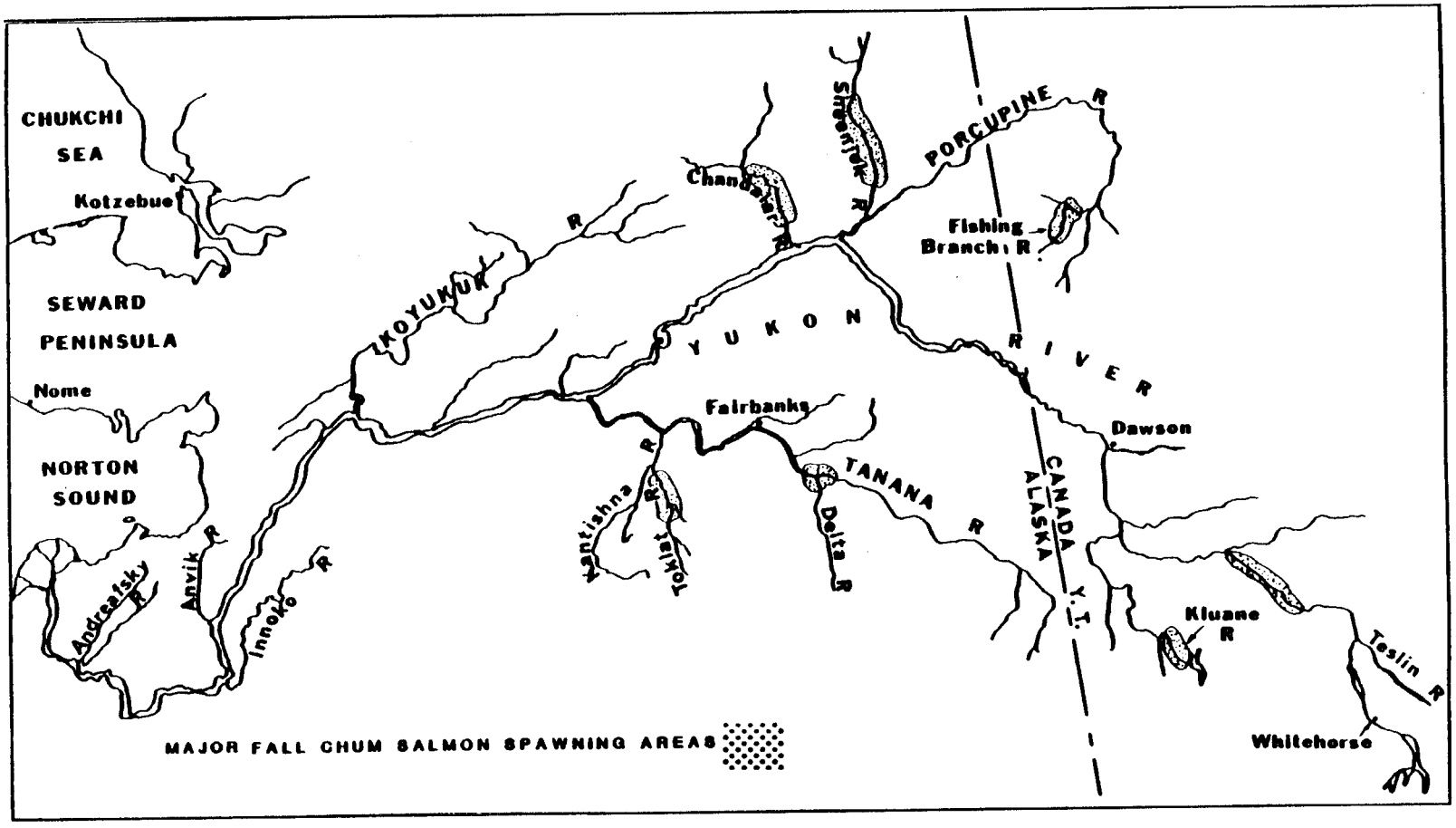

Figure 5. Fall chum salmon spawning areas in the Yukon River drainage.

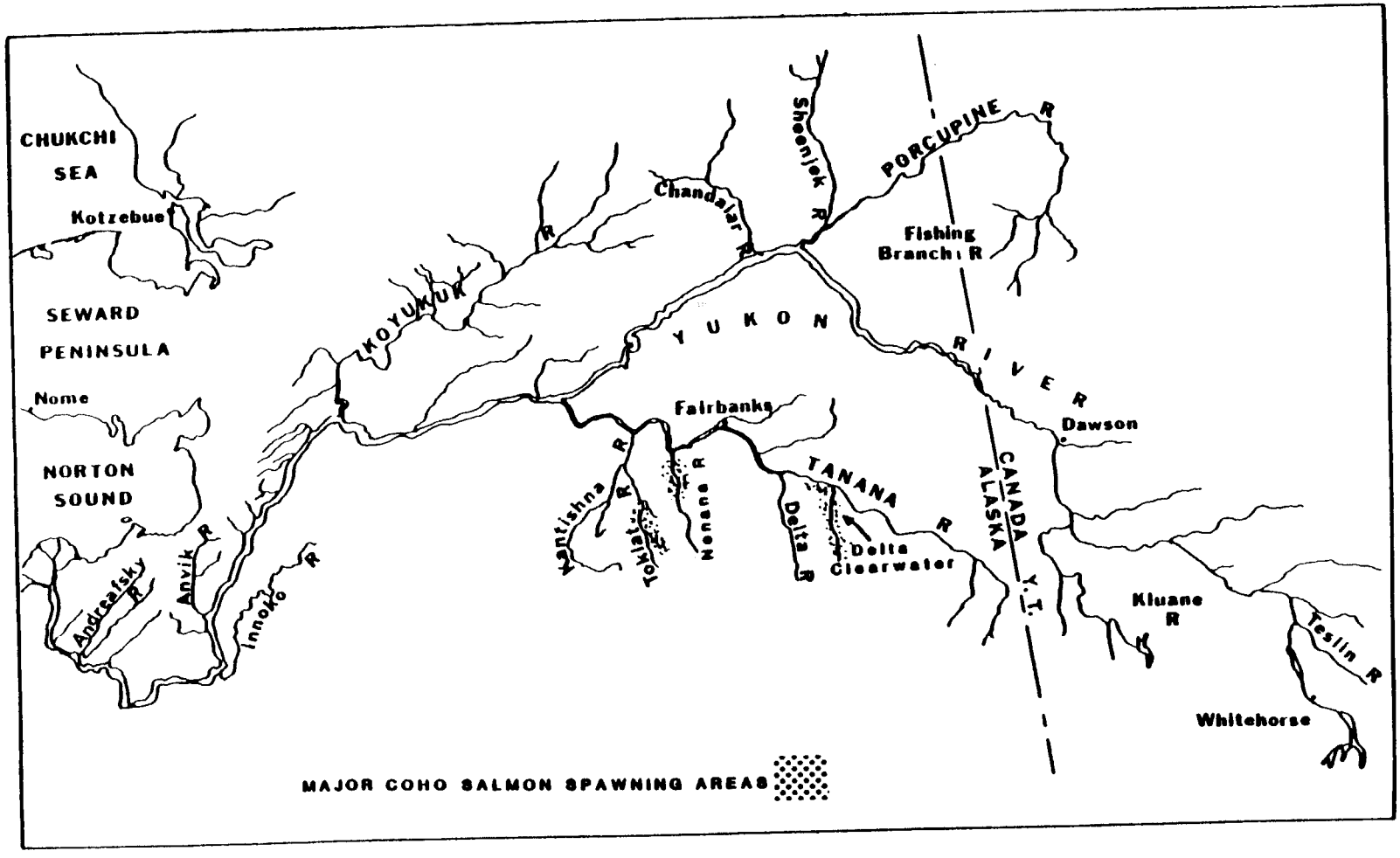

Figure 6. Coho salmon spawning areas in the Yukon River drainage.

APPENDICES

Appendix A.1. Yukon River District 1 salmon commercial catch by period, 1987.[a]

Period Dates	Mesh Size	Hours	No. of Fishermen	Chinook Fish	Chinook CPUE	Summer Chum Fish	Summer Chum CPUE	Fall Chum Fish	Fall Chum CPUE	Coho Fish	Coho CPUE
6/15-6/16	Unrestricted	24	362	12,970	1.49	10,951	1.26				
6/18-6/19	Unrestricted	24	404	22,513	2.32	19,817	2.04				
6/22-6/23	Unrestricted	24	398	15,041	1.57	13,586	1.42				
6/25-6/26	Unrestricted	12	405	11,623	2.39	23,488	4.83				
6/29-6/30	Restricted	24	361	7,904	0.91	67,330	7.77				
7/02-7/03	Restricted	24	355	4,665	0.55	50,698	5.95				
7/09-7/10	Restricted	12	313	1,927	0.51	37,028	9.86				
Total				76,643[b]		222,898		0		0	

[a] All fish taken with set or drift gill net. CPUE is number of fish per fisherman per hour.
[b] Chinook salmon harvest was 62,147 fish during unrestricted mesh fishing periods, and 14,496 fish during restricted mesh fishing periods.

Appendix A.2. Yukon River District 2 salmon commercial catch by period, 1987.[a]

Period Dates	Mesh Size	Hours	No. of Fishermen	Chinook Fish	Chinook CPUE	Summer Chum Fish	Summer Chum CPUE	Fall Chum Fish	Fall Chum CPUE	Coho Fish	Coho CPUE
6/17-6/18	Unrestricted	24	224	9,536	1.77	13,734	2.55				
6/21-6/22	Unrestricted	24	225	12,150	2.25	16,490	3.05				
6/24-6/25	Unrestricted	24	221	10,860	2.05	23,223	4.38				
6/29	Unrestricted	12	218	7,581	2.90	6,728	2.57				
7/01-7/02	Restricted	24	214	4,713	0.92	56,614	11.02				
7/06	Restricted	6	182	1,114	1.02	22,721	20.81				
7/09	Restricted	6	200	1,504	1.25	35,366	29.47				
Total				47,458[b]		174,876		0		0	

[a] All fish taken with set or drift gill net. CPUE is number of fish per fisherman per hour.
[b] Chinook salmon harvest was 40,127 fish during unrestricted mesh fishing periods, and 7,331 fish during restricted mesh fishing periods.

Appendix A.3. Yukon River District 3 salmon commercial catch by period, 1987.[a]

Period Dates	Mesh Size	Hours	No. of Fishermen	Chinook Fish	Chinook CPUE	Summer Chum Fish	Summer Chum CPUE	Fall Chum Fish	Fall Chum CPUE	Coho Fish	Coho CPUE
6/21-6/22	Unrestricted	24	8	753	3.92	368	1.92				
6/24-6/25	Unrestricted	24	8	757	3.94	425	2.21				
6/29	Unrestricted	12	8	403	4.20	231	2.41				
7/01-7/02	Restricted	24	9	126	0.58	2,477	11.47				
Total				2,039[b]		3,501		0		0	

[a] All fish taken with set or drift gill net. CPUE is number of fish per fisherman per hour.
[b] Chinook salmon harvest was 1,913 fish during unrestricted mesh fishing periods, and 126 fish during restricted mesh fishing periods.

Appendix A.4. Yukon River District 4 salmon commercial catch by period, 1987.[a]

Period Dates	Hours	No. of Fishermen	Chinook Fish	Chinook CPUE	Summer Chum Fish	Summer Chum CPUE	Fall Chum Fish	Fall Chum CPUE	Coho Fish	Coho CPUE
6/21-6/23	48	23	0	0.00	2,100	1.90				
6/24-6/26	48	46	13	0.01	11,224	5.08				
6/28-6/30	48	71	134	0.04	23,249	6.82				
7/01-7/03	48	80	228	0.06	30,326	7.90				
7/05-7/07	48	81	331	0.09	29,500	7.59				
7/12-7/14	48	82	558	0.14	30,464	7.74				
7/19-7/21	48	62	167	0.06	20,114	6.76				
7/26-7/28	48	55	93	0.04	4,488	1.70				
Total			1,524		151,465[b]		0		0	

[a] Fish taken by set gill net, drift gill net, and fish wheel. CPUE is number of fish per fishermen per hour.
[b] Includes 121,474 "equivalent fish" converted from roe sales assuming one pound of roe equivalent to one female chum salmon. Of this district total, an estimated 100,480 fish were believed to be reported as subsistence catch. An estimated additional 58,335 fish not sold in the round, sold as roe, or used for subsistence purposes were also harvested in this district. These fish are essentially all males and are a by-product of the commercial summer chum salmon roe fishery.

Appendix A.5. Yukon River District 5 salmon commercial catch by period, 1987.[a]

Period Dates	Hours	No. of Fishermen	Chinook Fish	Chinook CPUE	Summer Chum Fish	Summer Chum CPUE	Fall Chum Fish	Fall Chum CPUE	Coho Fish	Coho CPUE
6/26-6/28	48	7	127	0.38	27	0.56				
6/30-7/02	48	17	596	0.73	37	0.08				
7/03-7/05	48	21	738	0.73	124	0.23				
7/07-7/09	48	21	808	0.80	218	0.34				
7/10-7/11	24	15	431	1.20	0	0.00				
7/12-7/18[b]	168	3	314	0.62	0	0.00				
7/19-7/20[b]	24	3	91	1.26	0	0.00				
Total			3,105		406[c]		0		0	

[a] Fish taken by set gill net and fish wheel. CPUE is number of fish per fisherman per hour.
[b] Subdistrict 5D only.
[c] Includes 44 "equivalent fish" converted from roe sales assuming one pound of roe is equivalent to one female chum salmon. These fish are believed to be reported as subsistence catch.

Appendix A.6. Yukon River District 6 salmon commercial catch by period, 1987.[a]

Period Dates	Hours	No. of Fishermen	Chinook Fish	Chinook CPUE	Summer Chum Fish	Summer Chum CPUE	Fall Chum Fish	Fall Chum CPUE	Coho Fish	Coho CPUE
7/03-7/05	48	3	15	0.10	0	0.00				
7/06-7/08	48	8	185	0.48	68	0.18				
7/10-7/12	48	9	195	0.45	462	1.07				
7/13-7/15	48	8	102	0.27	666	1.73				
7/17-7/19	48	9	198	0.46	1,064	2.46				
7/20-7/21	24	13	451	1.45	2,234	7.16				
8/11-8/12	24	18	15	0.03	3,334	7.72				
8/14-8/16	48	14	41	0.06	3,232	4.81				
Total			1,202		11,060[b]		0		0	

[a] Fish taken by set gill net and fish wheel. CPUE is number of fish per fisherman per hour.
[b] Includes 450 "equivalent fish" converted from roe sales assuming one pound of roe is equivalent to one female chum salmon. These fish are believed to be reported as subsistence catch.

Appendix A.7. Yukon Territory, Canada, salmon commercial catch by period, 1987.[a]

Period Dates	Hours[b]	No. of Fishermen	Chinook	Fall Chum
-7/06	48	6	14	0
7/07-7/13	48	15	343	0
7/14-7/23	120	22	2,456	11
7/24-7/30	120	23	3,622	10
7/31-8/06	120	23	4,183	31
8/24-8/27[c]	96	11	53	193
8/28-9/03	96	12	18	684
9/04-9/10	96	16	9	8,148
9/11-9/17	96	12	2	8,943
9/18-9/24	96	15	1	7,345
9/25-10/01	96	11	2	6,985
10/02-10/08	96	14	1	5,344
10/09-10/15	96	3	0	1,240
10/16-10/22	96	5	0	1,407
10/23-10/29[d]	120	2	-	-
Total			10,704	40,341

[a] Catch taken primarily by gill nets, but an unreported proportion is taken by fish wheels.
[b] Represents open fishing in the area downstream of the Sixtymile River, where the majority of effort is located. Fishery openings above the Sixtymile River typically last 24 hours longer than the lower district.
[c] Fishery closed 8/7-8/23.
[d] Above the Sixtymile River only.

Appendix B.1. Whitehorse fishway daily chinook salmon escapement counts, 1987.

Date	Daily Counts	Cumulative Total	Cumulative Percent
29-Jul	1	1	
30-Jul	2	3	
31-Jul	0	3	0.3
01-Aug	0	3	0.9
02-Aug	1	4	1.2
03-Aug	1	5	1.5
04-Aug	3	8	2.4
05-Aug	5	13	4.0
06-Aug	8	21	6.4
07-Aug	3	24	7.3
08-Aug	2	26	8.0
09-Aug	12	38	11.6
10-Aug	7	45	13.8
11-Aug	4	49	15.0
12-Aug	2	51	15.6
13-Aug	7	58	17.7
14-Aug	30	88	26.9
15-Aug	12	100	30.6
16-Aug	21	121	37.0
17-Aug	23	144	44.0
18-Aug	28	172	52.6
19-Aug	15	187	57.2
20-Aug	25	212	64.8
21-Aug	39	251	76.8
22-Aug	22	273	83.5
23-Aug	15	288	88.1
24-Aug	9	297	90.8
25-Aug	11	308	94.2
26-Aug	5	313	95.7
27-Aug	8	321	98.2
28-Aug	2	323	98.8
29-Aug	3	326	99.7
30-Aug	1	327[a]	100.0

[a] Includes 120 fish (70 females, 50 males) taken for hatchery brood stock. Actual spawning escapement was 207 fish.

Appendix B.2. Big Salmon River weir daily chinook salmon escapement counts, 1987.

Date	Daily Count	Cumulative Count	Cumulative Percent
29-Jul	0	0	0.0
30-Jul	7	7	0.7
31-Jul	3	10	1.0
01-Aug	24	34	3.4
02-Aug	11	45	4.5
03-Aug	29	74	7.4
04-Aug	45	119	11.9
05-Aug	134	253	25.4
06-Aug	9	262	26.3
07-Aug	48	310	31.1
08-Aug	38	348	34.9
09-Aug	149	497	49.8
10-Aug	33	530	53.1
11-Aug	50	580	58.1
12-Aug	75	655	65.6
13-Aug	43	698	69.9
14-Aug	24	722	72.3
15-Aug	36	758	76.0
16-Aug	26	784	78.6
17-Aug	50	834	83.6
18-Aug	28	862	86.4
19-Aug	36	898	90.0
20-Aug	24	922	92.4
21-Aug	17	939	94.1
22-Aug	19	958	96.0
23-Aug	5	963	96.5
24-Aug	6	969	97.1
25-Aug	14	983	98.5
26-Aug	5	988	99.0
27-Aug	1	989	99.1
28-Aug	5	994	99.6
29-Aug	3	997	99.9
30-Aug	0	997	99.9
31-Aug	0	997	99.9
01-Sep	0	997	99.9
02-Sep	1	998	100.0

Appendix B.3. East Fork Andreafsky River daily adjusted salmon escapement tower counts by species, 1987.[a]

Date	Summer Chum Salmon Daily Count	Cumulative Count	Cumulative Percent	Chinook Salmon Daily Count	Cumulative Count	Cumulative Percent	Pink Salmon Daily Count	Cumulative Count	Cumulative Percent
25-Jun	0[b]	0	0.0	0[b]	0	0.0	0[b]	0	0.0
26-Jun	57[b]	57	0.1	0[b]	0	0.0	3[b]	3	0.4
27-Jun	139	196	0.4	3	3	0.1	0	3	0.4
28-Jun	286[c]	482	1.1	2[c]	5	0.2	0[c]	3	0.4
29-Jun	432	914	2.0	0	5	0.2	0	3	0.4
30-Jun	111	1,025	2.3	0	5	0.2	0	3	0.4
01-Jul	84	1,109	2.5	0	5	0.2	0	3	0.4
02-Jul	508	1,617	3.6	0	5	0.2	0	3	0.4
03-Jul	2,991[c]	4,608	10.2	8[c]	13	0.6	3[c]	6	0.9
04-Jul	5,474	10,082	22.3	17	30	1.5	6	12	1.8
05-Jul	5,206[c]	15,288	33.8	16[c]	46	2.3	3[c]	15	2.2
06-Jul	4,938	20,226	44.7	14	60	3.0	0	15	2.2
07-Jul	543[d]	20,769	45.9	9[d]	69	3.4	0[d]	15	2.2
08-Jul	348[d]	21,117	46.7	3[d]	72	3.6	3[d]	18	2.7
09-Jul	2,485	23,602	52.2	54	126	6.3	3	21	3.1
10-Jul	4,270	27,872	61.6	44	170	8.5	10	31	4.6
11-Jul	1,869	29,741	65.8	31	201	10.0	6	37	5.5
12-Jul	3,198	32,939	72.8	54	255	12.7	6	43	6.4
13-Jul	2,683	35,622	78.8	129	384	19.1	19	62	9.2
14-Jul	1,620[d]	37,242	82.4	159[d]	543	27.0	39[d]	101	14.9
15-Jul	1,335[d]	38,577	85.3	150[d]	693	34.5	39[d]	140	20.7
16-Jul	2,857	41,434	91.6	156	849	42.2	100	240	35.5
17-Jul	1,413	42,847	94.8	186	1,035	51.5	113	353	52.2
18-Jul	675	43,522	96.2	122	1,157	57.5	84	437	64.6
19-Jul	592[c]	44,114	97.6	196[c]	1,353	67.3	55[c]	492	72.8
20-Jul	508	44,622	98.7	271	1,624	80.8	26	518	76.6
21-Jul	240	44,862	99.2	241	1,865	92.7	32	550	81.4
22-Jul	101	44,963	99.4	41	1,906	94.8	26	576	85.2
23-Jul	115	45,078	99.7	47	1,953	97.1	16	592	87.6
24-Jul	73	45,151	99.8	27	1,980	98.5	55	647	95.7
25-Jul	70	45,221	100.0	31	2,011	100.0	29	676	100.0

[a] All daily escapement estimates are expanded from 16 hourly count estimates unless inidcated otherwise.
[b] Counting was conducted for only 5 hours on 25 June and 10 hours on 26 June. These counts were not expanded to 24 hour estimates.
[c] Daily counts estimated by interpolation of counts for preceding and following day due to scheduled crew day off.
[d] Counting was conducted for 24 hours, therefore no daily expansion factor was applied.

Appendix B.4. Anvik River daily adjusted summer chum salmon escapement sonar counts, 1987.

Date	Daily Count	Cumulative Count	Cumulative Percent
21-Jun	202	202	0.0
22-Jun	339	541	0.1
23-Jun	425	966	0.2
24-Jun	467	1,433	0.3
25-Jun	605	2,038	0.4
26-Jun	1,586	3,624	0.8
27-Jun	3,043	6,667	1.5
28-Jun	3,731	10,398	2.3
29-Jun	6,401	16,799	3.7
30-Jun	14,571	31,370	6.9
01-Jul	8,637	40,007	8.8
02-Jul	13,065	53,072	11.6
03-Jul	14,974	68,046	14.9
04-Jul	21,226	89,272	19.6
05-Jul	25,487	114,759	25.2
06-Jul	36,536	151,295	33.2
07-Jul	25,139	176,434	38.7
08-Jul	16,094	192,528	42.2
09-Jul	6,074	198,602	43.6
10-Jul	11,533	210,135	46.1
11-Jul	11,624	221,759	48.6
12-Jul	13,444	235,203	51.6
13-Jul	23,464	258,667	56.7
14-Jul	29,136	287,803	63.1
15-Jul	35,855	323,658	71.0
16-Jul	28,964	352,622	77.4
17-Jul	15,179	367,801	80.7
18-Jul	13,744	381,545	83.7
19-Jul	13,599	395,144	86.7
20-Jul	16,658	411,802	90.3
21-Jul	13,530	425,332	93.3
22-Jul	9,148	434,480	95.3
23-Jul	8,301	442,781	97.1
24-Jul	6,518	449,299	98.6
25-Jul	3,813	453,112	99.4
26-Jul	2,764[a]	455,876	100.0

[a] Sonar counters operated from 0000 hours to 1200 hours. Resulting count is only a partial daily escapement estimate.

Appendix B.5. Clear Creek weir daily salmon escapement counts by species, 1987.

	Chinook Salmon	Cumulative			Fall Chum Salmon	Cumulative			Coho Salmon	Cumulative	
Date	Daily Count	Count	Percent	Date	Daily Count	Count	Percent		Daily Count	Count	Percent
12-Jul	0	0	0.0	23-Sep	0	0	0.0		29	29	1.2
13-Jul	4	4	2.8	24-Sep	4	4	0.3		69	98	4.0
14-Jul	14	18	12.7	25-Sep	1	5	0.4		59	157	6.4
15-Jul	10	28	19.7	26-Sep	3	8	0.6		58	215	8.8
16-Jul	9	37	26.1	27-Sep	18	26	2.0		211	426	17.5
17-Jul	6	43	30.3	28-Sep	35	61	4.6		162	588	24.1
18-Jul	9	52	36.6	29-Sep	18	79	5.9		40	628	25.8
19-Jul	10	62	43.7	30-Sep	71	150	11.3		246	874	35.9
20-Jul	10	72	50.7	01-Oct	75	225	16.9		153	1027	42.2
21-Jul	8	80	56.3	02-Oct	58	283	21.3		149	1176	48.3
22-Jul	7	87	61.3	03-Oct	21	304	22.9		73	1249	51.3
23-Jul	8	95	66.9	04-Oct	13	317	23.9		69	1318	54.1
24-Jul	10	105	73.9	05-Oct	31	348	26.2		113	1431	58.8
25-Jul	2	107	75.4	06-Oct	42	390	29.4		84	1515	62.2
26-Jul	11	118	83.1	07-Oct	38	428	32.2		85	1600	65.7
27-Jul	6	124	87.3	08-Oct	102	530	39.9		142	1742	71.5
28-Jul	7	131	92.3	09-Oct	77	607	45.7		96	1838	75.5
29-Jul	6	137	96.5	10-Oct	67	674	50.8		114	1952	80.2
30-Jul	2	139	97.9	11-Oct	99	773	58.2		137	2089	85.8
31-Jul	1	140	98.6	12-Oct	78	851	64.1		93	2182	89.6
01-Aug	1	141	99.3	13-Oct	61	912	68.7		96	2278	93.6
02-Aug	1	142[a]	100.0	14-Oct	73	985	74.2		70	2348	96.4
				15-Oct	19	1004	75.6		23	2371	97.4
				16-Oct		1004	75.6			2371	97.4
				17-Oct	35	1039	78.2		18	2389	98.1
				18-Oct		1039	78.2			2389	98.1
				19-Oct	94	1133	85.3		16	2405	98.8
				20-Oct		1133	85.3			2405	98.8
				21-Oct	50	1183	89.1		21	2426	99.6
				22-Oct		1183	89.1			2426	99.6
				23-Oct	45	1228	92.5		0	2426	99.6
				24-Oct		1228	92.5			2426	99.6
				25-Oct		1228	92.5			2426	99.6
				26-Oct	57	1285	96.8		2	2428	99.7
				27-Oct		1285	96.8			2428	99.7
				28-Oct	43	1328	100.0		7	2435	100.0

[a] It was estimated that approximately 20 fish entered the stream prior to installation of the weir and 3 fish entered after removal for a season total of 165 fish.

Appendix B.6. Chandalar River daily adjusted fall chum salmon escapement sonar counts, 1987.

Date	Daily Count	Cumulative Count	Cumulative Percent
10-Aug	225	225	0.4
11-Aug	396	621	1.2
12-Aug	294	915	1.8
13-Aug	192	1,107	2.1
14-Aug	255	1,362	2.6
15-Aug	108	1,470	2.8
16-Aug	124	1,594	3.1
17-Aug	428	2,022	3.9
18-Aug	531	2,553	4.9
19-Aug	434	2,987	5.7
20-Aug	360	3,347	6.4
21-Aug	293	3,640	7.0
22-Aug	238	3,877	7.4
23-Aug	372	4,249	8.1
24-Aug	260	4,509	8.6
25-Aug	334	4,843	9.3
26-Aug	259	5,102	9.8
27-Aug	310	5,412	10.4
28-Aug	272	5,684	10.9
29-Aug	931	6,615	12.7
30-Aug	430	7,045	13.5
31-Aug	666	7,712	14.8
01-Sep	2,218	9,930	19.0
02-Sep	2,071	12,000	23.0
03-Sep	3,137	15,137	29.0
04-Sep	2,900	18,037	34.5
05-Sep	2,046	20,083	38.5
06-Sep	2,862	22,945	43.9
07-Sep	2,415	25,360	48.6
08-Sep	3,213	28,573	54.7
09-Sep	2,381	30,953	59.3
10-Sep	2,128	33,082	63.3
11-Sep	2,195	35,277	67.5
12-Sep	1,889	37,166	71.2
13-Sep	1,678	38,843	74.4
14-Sep	1,081	39,924	76.4
15-Sep	1,413	41,337	79.1
16-Sep	2,063	43,400	83.1
17-Sep	1,785	45,184	86.5
18-Sep	1,132	46,316	88.7
19-Sep	999	47,315	90.6
20-Sep	842	48,157	92.2
21-Sep	801	48,958	93.7
22-Sep	789	49,748	95.2
23-Sep	958	50,706	97.1
24-Sep	1,173	51,879	99.3
25-Sep	351	52,229	100.0

Appendix B.7. Sheenjek River daily adjusted fall chum salmon escapement sonar counts, 1987.

Date	Daily Count	Cumulative Count	Cumulative Percent
25-Aug	168	168	0.1
26-Aug	314	482	0.3
27-Aug	795	1,277	0.9
28-Aug	951	2,228	1.6
29-Aug	993	3,221	2.3
30-Aug	1,400	4,621	3.3
31-Aug	1,639	6,260	4.5
01-Sep	3,937	10,197	7.3
02-Sep	3,295	13,492	9.6
03-Sep	7,585	21,077	15.0
04-Sep	11,386	32,463	23.2
05-Sep	10,962	43,425	31.0
06-Sep	5,439	48,864	34.9
07-Sep	10,182	59,046	42.1
08-Sep	11,122	70,168	50.1
09-Sep	8,487	78,655	56.1
10-Sep	5,561	84,216	60.1
11-Sep	4,882	89,098	63.6
12-Sep	6,294	95,392	68.1
13-Sep	5,831	101,223	72.3
14-Sep	4,485	105,708	75.5
15-Sep	3,963	109,671	78.3
16-Sep	4,118	113,789	81.2
17-Sep	4,763	118,552	84.6
18-Sep	4,326	122,878	87.7
19-Sep	2,635	125,513	89.6
20-Sep	3,160	128,673	91.9
21-Sep	3,223	131,896	94.2
22-Sep	1,988	133,884	95.6
23-Sep	2,878	136,762	97.6
24-Sep	3,324	140,086	100.0

Appendix B.8. Fishing Branch River weir daily fall chum salmon escapement counts, 1987.

Date	Daily Counts				Cumulative	
	Males	Females	Unknown	Total	Total	Percent
29-Aug	7	4	0	11	11	0.0
30-Aug	0	0	0	0	11	0.0
31-Aug	22	8	0	30	41	0.1
01-Sep	91	48	0	139	180	0.4
02-Sep	157	93	3	253	433	0.9
03-Sep	198	111	0	309	742	1.5
04-Sep	191	111	0	302	1,044	2.1
05-Sep	241	169	0	410	1,454	3.0
06-Sep	208	139	1	348	1,802	3.7
07-Sep	203	163	2	368	2,170	4.4
08-Sep	144	197	5	346	2,516	5.1
09-Sep	143	134	2	279	2,795	5.7
10-Sep	135	127	0	262	3,057	6.2
11-Sep	203	170	2	375	3,432	7.0
12-Sep	307	259	0	566	3,998	8.2
13-Sep	458	404	1	863	4,861	9.9
14-Sep	594	571	3	1,168	6,029	12.3
15-Sep	802	829	2	1,633	7,662	15.7
16-Sep	955	990	2	1,947	9,609	19.6
17-Sep	1,329	1,567	8	2,904	12,513	25.6
18-Sep	1,451	1,587	2	3,040	15,553	31.8
19-Sep	1,667	2,203	9	3,879	19,432	39.7
20-Sep	1,560	1,676	2	3,238	22,670	46.3
21-Sep	1,274	1,495	1	2,770	25,440	52.0
22-Sep	1,241	1,396	0	2,637	28,077	57.4
23-Sep	941	1,148	0	2,089	30,166	61.6
24-Sep	948	992	0	1,940	32,106	65.6
25-Sep	711	1,032	0	1,743	33,849	69.1
26-Sep	777	922	0	1,699	35,548	72.6
27-Sep	623	940	0	1,563	37,111	75.8
28-Sep	612	760	1	1,373	38,484	78.6
29-Sep	431	673	0	1,104	39,588	80.9
30-Sep	382	538	0	920	40,508	82.7
01-Oct	350	511	0	861	41,369	84.5
02-Oct	281	505	0	786	42,155	86.1
03-Oct	228	351	0	579	42,734	87.3
04-Oct	283	383	0	666	43,400	88.7
05-Oct	286	384	0	670	44,070	90.0
06-Oct	268	360	0	628	44,698	91.3
07-Oct	261	392	0	653	45,351	92.6
08-Oct	155	323	0	478	45,829	93.6
09-Oct	181	328	0	509	46,338	94.7
10-Oct	226	318	0	544	46,882	95.8
11-Oct	161	301	0	462	47,344	96.7
12-Oct	167	281	0	448	47,792	97.6
13-Oct	123	231	2	356	48,148	98.3
14-Oct	88	178	0	266	48,414	98.9
15-Oct	66	126	0	192	48,606	99.3
16-Oct	60	147	0	207	48,813	99.7
17-Oct	40	59	0	99	48,912	99.9
18-Oct	20	24	0	44	48,956	100.0
Total	22,250	26,658	48	48,956		

Appendix C.1. Yukon River District 1 chinook salmon commercial gill net catch, age, and sex composition by fishing period, 1987.

		Brood Year and Age Group									
		1983	1982		1981		1980		1979		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates: 6/15-6/16 Period 1[a]											
Sample Dates: 6/16											
Sample Size: 365											
Female	Percent of Sample	0.0	1.9	0.0	37.5	0.0	4.9	3.3	0.0	0.3	47.9
	Number in Catch	0	249	0	4,868	0	640	426	0	36	6,219
Male	Percent of Sample	0.5	3.6	0.0	37.8	0.5	5.2	3.6	0.0	0.8	52.1
	Number in Catch	71	462	0	4,904	71	675	462	0	107	6,752
Total	Percent of Sample	0.5	5.5	0.0	75.3	0.5	10.1	6.8	0.0	1.1	100.0
	Number in Catch	71	711	0	9,772	71	1,315	888	0	142	12,970
	Standard Error	50	155	0	293	50	205	172	0	71	
Stratum Dates: 6/18-6/19 Period 2[a]											
Sample Dates: 6/19											
Sample Size: 360											
Female	Percent of Sample	0.0	1.4	0.0	51.1	0.3	4.2	2.2	0.0	0.6	59.7
	Number in Catch	0	313	0	11,507	63	938	500	0	125	13,446
Male	Percent of Sample	1.7	5.8	0.0	27.8	0.0	3.1	1.9	0.0	0.0	40.3
	Number in Catch	375	1,313	0	6,254	0	688	438	0	0	9,068
Total	Percent of Sample	1.7	7.2	0.0	78.9	0.3	7.2	4.2	0.0	0.6	100.0
	Number in Catch	375	1,626	0	17,760	63	1,626	938	0	125	22,513
	Standard Error	152	308	0	485	63	308	237	0	88	
Stratum Dates: 6/22-6/23 Period 3[a]											
Sample Dates: 6/23											
Sample Size: 351											
Female	Percent of Sample	0.0	1.1	0.0	44.7	0.0	4.6	1.4	0.0	0.3	52.1
	Number in Catch	0	171	0	6,728	0	686	214	0	43	7,842
Male	Percent of Sample	1.4	4.0	0.0	34.2	1.4	5.4	1.1	0.0	0.3	47.9
	Number in Catch	214	600	0	5,142	214	814	171	0	43	7,198
Total	Percent of Sample	1.4	5.1	0.0	78.9	1.4	10.0	2.6	0.0	0.6	100.0
	Number in Catch	214	771	0	11,870	214	1,500	386	0	86	15,041
	Standard Error	95	177	0	328	95	241	127	0	61	
Stratum Dates: 6/25-6/26 Period 4[a]											
Sample Dates: 6/26											
Sample Size: 360											
Female	Percent of Sample	0.0	1.1	0.0	50.6	0.0	6.1	1.1	0.0	0.0	58.9
	Number in Catch	0	129	0	5,876	0	710	129	0	0	6,844
Male	Percent of Sample	0.6	1.7	0.3	34.4	0.0	3.1	1.1	0.0	0.0	41.1
	Number in Catch	65	194	32	4,003	0	355	129	0	0	4,778
Total	Percent of Sample	0.6	2.8	0.3	85.0	0.0	9.2	2.2	0.0	0.0	100.0
	Number in Catch	65	323	32	9,880	0	1,065	258	0	0	11,623
	Standard Error	46	101	32	219	0	177	90	0	0	

Continued

Appendix C.1. (p. 2 of 2)

		Brood Year and Age Group									
		1983	1982		1981		1980		1979		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates: 6/29-6/30 Period 5[b]											
Sample Dates: 6/30											
Sample Size: 359											
Female	Percent of Sample	0.0	1.9	0.0	39.6	0.0	6.1	0.6	0.3	0.0	48.5
	Number in Catch	0	154	0	3,126	0	484	44	22	0	3,830
Male	Percent of Sample	5.3	9.2	0.0	30.6	0.6	4.7	1.1	0.0	0.0	51.5
	Number in Catch	418	727	0	2,422	44	374	88	0	0	4,073
Total	Percent of Sample	5.3	11.1	0.0	70.2	0.6	10.9	1.7	0.3	0.0	100.0
	Number in Catch	418	881	0	5,548	44	859	132	22	0	7,904
	Standard Error	94	131	0	191	31	130	54	22	0	
Stratum Dates: 7/02-7/03 Period 6[b]											
Sample Dates: 7/03											
Sample Size: 165											
Female	Percent of Sample	0.0	1.2	0.0	31.5	0.0	4.8	0.0	0.0	0.0	37.6
	Number in Catch	0	57	0	1,470	0	226	0	0	0	1,753
Male	Percent of Sample	16.4	12.1	0.0	31.5	0.0	1.8	0.0	0.6	0.0	62.4
	Number in Catch	763	565	0	1,471	0	85	0	28	0	2,912
Total	Percent of Sample	16.4	13.3	0.0	63.0	0.0	6.7	0.0	0.6	0.0	100.0
	Number in Catch	763	622	0	2,941	0	311	0	28	0	4,665
	Standard Error	135	124	0	176	0	91	0	28	0	
Stratum Dates: 7/09-7/10 Period 7[b]											
Sample Dates: 7/10											
Sample Size: 63											
Female	Percent of Sample	0.0	1.6	0.0	39.7	0.0	4.8	0.0	0.0	0.0	46.0
	Number in Catch	0	31	0	766	0	92	0	0	0	889
Male	Percent of Sample	4.8	3.2	0.0	39.7	1.6	4.8	0.0	0.0	0.0	54.0
	Number in Catch	92	61	0	765	31	92	0	0	0	1,041
Total	Percent of Sample	4.8	4.8	0.0	79.4	1.6	9.5	0.0	0.0	0.0	100.0
	Number in Catch	92	92	0	1,528	31	184	0	0	0	1,927
	Standard Error	52	52	0	99	31	72	0	0	0	

[a] Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.
[b] Chum salmon season, 6 in (15.2 cm) mesh size maximum.

Appendix C.2. Yukon River District 1 chinook salmon commercial gill net catch, age, and sex composition by mesh size gear type, 1987.

		Brood Year and Age Group									
		1983	1982		1981		1980		1979		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates: 6/15-6/26 Periods 1-4 Unrestricted Mesh[a]											
Sample Dates: 6/16-6/26											
Sample Size: 1,436											
Female	Percent of Sample	0.0	1.4	0.0	46.6	0.1	4.8	2.0	0.0	0.3	55.3
	Number in Catch	0	862	0	28,979	63	2,974	1,269	0	204	34,351
Male	Percent of Sample	1.2	4.1	0.1	32.7	0.5	4.1	1.9	0.0	0.2	44.7
	Number in Catch	725	2,569	32	20,303	285	2,532	1,200	0	150	27,796
Total	Percent of Sample	1.2	5.5	0.1	79.3	0.6	8.9	4.0	0.0	0.6	100.0
	Number in Catch	725	3,431	32	49,282	348	5,506	2,470	0	353	62,147
	Standard Error	192	400	32	690	125	475	332	0	128	
Stratum Dates: 6/29-7/10 Periods 5-7 Restricted Mesh[b]											
Sample Dates: 6/30-7/10											
Sample Size: 587											
Female	Percent of Sample	0.0	1.7	0.0	37.0	0.0	5.5	0.3	0.2	0.0	44.6
	Number in Catch	0	242	0	5,362	0	802	44	22	0	6,472
Male	Percent of Sample	8.8	9.3	0.0	32.1	0.5	3.8	0.6	0.2	0.0	55.4
	Number in Catch	1,273	1,353	0	4,658	75	551	88	28	0	8,026
Total	Percent of Sample	8.8	11.0	0.0	69.1	0.5	9.3	0.9	0.3	0.0	100.0
	Number in Catch	1,273	1,595	0	10,017	75	1,354	132	50	0	14,496
	Standard Error	172	188	0	278	44	174	54	36	0	
Stratum Dates: 6/15-7/10 Season Total											
Sample Dates: 6/16-7/10											
Sample Size: 2,023											
Female	Percent of Sample	0.0	1.4	0.0	44.8	0.1	4.9	1.7	0.0	0.3	53.3
	Number in Catch	0	1,104	0	34,341	63	3,776	1,313	22	204	40,823
Male	Percent of Sample	2.6	5.1	0.0	32.6	0.5	4.0	1.7	0.0	0.2	46.7
	Number in Catch	1,998	3,922	32	24,961	360	3,083	1,288	28	150	35,822
Total	Percent of Sample	2.6	6.6	0.0	77.4	0.6	9.0	3.4	0.1	0.5	100.0
	Number in Catch	1,998	5,026	32	59,299	423	6,860	2,602	50	353	76,643
	Standard Error	258	442	32	744	132	506	336	36	128	

[a] Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.
[b] Chum salmon season, 6 in (15.2 cm) mesh size maximum.

Appendix C.3. Yukon River District 2 chinook salmon commercial gill net catch, age, and sex composition by fishing period, 1987.

			Brood Year and Age Group							
		1983	1982		1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5	Total
Stratum Dates: 6/17-6/18 Period 1[a]										
Sample Dates: 6/18										
Sample Size: 363										
Female	Percent of Sample	0.0	0.0	0.0	45.2	0.0	4.7	1.7	0.0	51.5
	Number in Catch	0	0	0	4,309	0	447	158	0	4,914
Male	Percent of Sample	0.0	2.5	0.0	36.9	0.0	6.9	1.9	0.3	48.5
	Number in Catch	0	236	0	3,520	0	657	184	26	4,623
Total	Percent of Sample	0.0	2.5	0.0	82.1	0.0	11.6	3.6	0.3	100.0
	Number in Catch	0	236	0	7,829	0	1,103	342	26	9,536
	Standard Error	0	78	0	192	0	160	93	26	
Stratum Dates: 6/21-6/22 Period 2[a]										
Sample Dates: 6/22										
Sample Size: 352										
Female	Percent of Sample	0.0	0.6	0.0	33.2	0.3	6.0	2.3	0.3	42.6
	Number in Catch	0	69	0	4,038	35	725	276	35	5,178
Male	Percent of Sample	0.6	5.1	0.3	42.0	1.1	5.7	2.6	0.0	57.4
	Number in Catch	69	621	35	5,108	138	690	311	0	6,972
Total	Percent of Sample	0.6	5.7	0.3	75.3	1.4	11.6	4.8	0.3	100.0
	Number in Catch	69	690	35	9,146	173	1,415	587	35	12,150
	Standard Error	49	150	35	280	77	208	139	35	
Stratum Dates: 6/24-6/25 Period 3[a]										
Sample Dates: 6/25										
Sample Size: 362										
Female	Percent of Sample	0.0	0.6	0.0	43.4	0.6	6.6	0.8	0.0	51.9
	Number in Catch	0	60	0	4,710	60	720	90	0	5,640
Male	Percent of Sample	0.6	6.6	0.0	33.7	0.0	5.8	1.4	0.0	48.1
	Number in Catch	60	720	0	3,660	0	630	150	0	5,220
Total	Percent of Sample	0.6	7.2	0.0	77.1	0.6	12.4	2.2	0.0	100.0
	Number in Catch	60	780	0	8,370	60	1,350	240	0	10,860
	Standard Error	42	148	0	240	42	189	84	0	
Stratum Dates: 6/29 Period 4[a]										
Sample Dates: 6/29										
Sample Size: 379										
Female	Percent of Sample	0.3	1.3	0.0	37.7	0.0	6.9	0.5	0.0	46.7
	Number in Catch	20	100	0	2,860	0	520	40	0	3,540
Male	Percent of Sample	2.4	7.4	0.0	36.9	0.3	5.5	0.8	0.0	53.3
	Number in Catch	180	560	0	2,800	20	420	60	0	4,040
Total	Percent of Sample	2.6	8.7	0.0	74.7	0.3	12.4	1.3	0.0	100.0
	Number in Catch	200	660	0	5,661	20	940	100	0	7,581
	Standard Error	62	110	0	170	20	129	44	0	

Continued

Appendix C.3. (p. 2 of 2)

		Brood Year and Age Group								
		1983	1982		1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5	Total
Stratum Dates: 7/01-7/02 Period 5[b]										
Sample Dates: 7/02										
Sample Size: 172										
Female	Percent of Sample	0.6	0.0	0.0	20.3	0.0	5.2	0.0	0.0	26.2
	Number in Catch	27	0	0	959	0	247	0	0	1,233
Male	Percent of Sample	25.0	20.3	0.0	22.1	0.0	6.4	0.0	0.0	73.8
	Number in Catch	1,178	959	0	1,041	0	301	0	0	3,480
Total	Percent of Sample	25.6	20.3	0.0	42.4	0.0	11.6	0.0	0.0	100.0
	Number in Catch	1,206	959	0	2,000	0	548	0	0	4,713
	Standard Error	157	145	0	178	0	116	0	0	

[a] Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.
[b] Chum salmon season, 6 in (15.2 cm) mesh size maximum.

Appendix C.4. Yukon River District 2 chinook salmon commercial gill net catch, age, and sex composition by mesh size gear type, 1987.

		Brood Year and Age Group								
		1983	1982		1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5	Total
Stratum Dates: 6/17-6/29 Periods 1-4 Unrestricted Mesh[a]										
Sample Dates: 6/18-6/29										
Sample Size: 1,456										
Female	Percent of Sample	0.0	0.6	0.0	39.7	0.2	6.0	1.4	0.1	48.0
	Number in Catch	20	229	0	15,917	95	2,412	564	35	19,272
Male	Percent of Sample	0.8	5.3	0.1	37.6	0.4	6.0	1.8	0.1	52.0
	Number in Catch	309	2,137	35	15,088	158	2,397	705	26	20,855
Total	Percent of Sample	0.8	5.9	0.1	77.3	0.6	12.0	3.2	0.2	100.0
	Number in Catch	329	2,366	35	31,006	253	4,808	1,269	61	40,127
	Standard Error	90	250	35	449	90	348	192	43	
Stratum Dates: 7/01-7/09 Periods 5-7 Restricted Mesh[b,c]										
Sample Dates: 7/02										
Sample Size: 172										
Female	Percent of Sample	0.6	0.0	0.0	20.3	0.0	5.2	0.0	0.0	26.2
	Number in Catch	43	0	0	1,492	0	384	0	0	1,918
Male	Percent of Sample	25.0	20.3	0.0	22.1	0.0	6.4	0.0	0.0	73.8
	Number in Catch	1,833	1,492	0	1,620	0	469	0	0	5,413
Total	Percent of Sample	25.6	20.3	0.0	42.4	0.0	11.6	0.0	0.0	100.0
	Number in Catch	1,875	1,492	0	3,111	0	852	0	0	7,331
	Standard Error	245	226	0	277	0	180	0	0	
Stratum Dates: 6/17-7/09 Season Total										
Sample Dates: 6/18-7/02										
Sample Size: 1,628										
Female	Percent of Sample	0.1	0.5	0.0	36.7	0.2	5.9	1.2	0.1	44.6
	Number in Catch	63	229	0	17,409	95	2,796	564	35	21,190
Male	Percent of Sample	4.5	7.6	0.1	35.2	0.3	6.0	1.5	0.1	55.4
	Number in Catch	2,142	3,629	35	16,708	158	2,866	705	26	26,268
Total	Percent of Sample	4.6	8.1	0.1	71.9	0.5	11.9	2.7	0.1	100.0
	Number in Catch	2,204	3,858	35	34,117	253	5,660	1,269	61	47,458
	Standard Error	261	337	35	528	90	392	192	43	

[a] Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.
[b] Chum salmon season, 6 in (15.2 cm) mesh size maximum.
[c] Based on District 2 commercial catch samples from fishing period 5 (7/01-7/02).

Appendix C.5. Yukon River District 3 chinook salmon commercial gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group								
		1983	1982		1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5	Total
Female	Percent of Sample	0.1	0.5	0.0	36.7	0.2	5.9	1.2	0.1	44.6
	Number in Catch	3	10	0	748	4	120	24	2	910
Male	Percent of Sample	4.5	7.6	0.1	35.2	0.3	6.0	1.5	0.1	55.4
	Number in Catch	92	156	2	718	7	123	30	1	1,129
Total	Percent of Sample	4.6	8.1	0.1	71.9	0.5	11.9	2.7	0.1	100.0
	Number in Catch	95	166	2	1,466	11	243	55	3	2,039

[a] Based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix C.6. Yukon River District 4 chinook salmon catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group						
		1984	1983	1982	1981	1980		
		1.1	1.2	1.3	1.4	1.5	2.4	Total
Stratum Dates:	6/21-7/28[b]							
Sample Dates:	7/06-7/30							
Sample Size:	377[c]							
Female	Percent of Sample	0.0	0.5	3.2	45.1	7.2	0.8	56.8
	Number in Catch	0	47	304	4,278	683	76	5,388
Male	Percent of Sample	0.3	7.4	7.4	23.1	3.7	1.3	43.2
	Number in Catch	28	702	702	2,191	351	123	4,097
Total	Percent of Sample	0.3	7.9	10.6	68.2	10.9	2.1	100.0
	Number in Catch	28	749	1,006	6,469	1,034	199	9,485
	Standard Error	27	132	151	228	152	70	

[a] Pooled commercial and subsistence, gill net and fish wheel catch. Based on District 4 commercial and subsistence catch samples pooled, taken with various mesh size gill nets, up to 8-1/2 in (21.6 cm) maximum, and fish wheels.

[b] Commercial season.

[c] Includes 281 gill net samples and 96 fish wheel samples.

Appendix C.7. Yukon River District 5 chinook salmon gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group						
		1983	1982	1981		1980		
		1.2	1.3	1.4	2.3	1.5	2.4	Total
Stratum Dates:	6/26-7/20[b]							
Sample Dates:	7/08-7/19							
Sample Size:	474							
Female	Percent of Sample	0.2	0.6	38.7	0.0	9.9	0.2	49.6
	Number in Catch	32	96	6,180	0	1,581	32	7,921
Male	Percent of Sample	3.8	7.4	33.1	0.2	5.1	0.8	50.4
	Number in Catch	607	1,182	5,286	32	814	128	8,049
Total	Percent of Sample	4.0	8.0	71.8	0.2	15.0	1.0	100.0
	Number in Catch	639	1,278	11,466	32	2,395	160	15,970
	Standard Error	144	199	330	33	262	73	

[a] Pooled commercial and subsistence catch, where the proportion of commercial catch taken by gill net is applied to total subsistence catch to obtain subsistence catch taken by gill net. Based on District 5 commercial and subsistence catch samples pooled, taken with various mesh size gill nets up to 8-1/2 in (21.6 cm) maximum.

[b] Commercial season.

Appendix C.8. Yukon River District 5 chinook salmon fish wheel catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group								
		1984	1983	1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	Total
Stratum Dates:	6/28-7/20[b]									
Sample Dates:	7/08-7/17									
Sample Size:	528									
Female	Percent of Sample	0.0	0.0	1.5	0.0	25.6	0.0	4.0	0.0	31.1
	Number in Catch	0	0	96	0	1,637	0	256	0	1,989
Male	Percent of Sample	0.8	15.3	20.6	0.2	29.9	0.8	0.9	0.4	68.9
	Number in Catch	51	979	1,318	13	1,912	51	58	26	4,408
Total	Percent of Sample	0.8	15.3	22.1	0.2	55.5	0.8	4.9	0.4	100.0
	Number in Catch	51	979	1,414	13	3,549	51	314	26	6,397
	Standard Error	25	100	116	12	138	25	60	18	

[a] Pooled commercial and subsistence catch, where the proportion of commercial catch taken by fish wheel is applied to total subsistence catch to obtain subsistence catch taken by fish wheel. Based on District 5 commercial and subsistence catch samples pooled,

[b] Commercial season.

Appendix C.9. Yukon Territory chinook salmon commercial catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group							
		1983	1982	1981		1980		1979	
		1.2	1.3	1.4	2.3	1.5	2.4	2.5	Total
Sample Dates:	7/21 - 8/06								
Sample Size:	246								
Female	Percent of Sample	2.9	5.7	31.7	1.2	11.8	4.5	0.4	58.2
	Number in Catch	309	609	3,391	131	1,262	479	44	6,225
Male	Percent of Sample	2.0	6.9	25.6	0.8	3.7	2.4	0.4	41.8
	Number in Catch	214	740	2,741	87	392	261	44	4,479
Total	Percent of Sample	4.9	12.6	57.3	2.0	15.5	6.9	0.8	100.0
	Number in Catch	523	1,349	6,132	218	1,654	740	88	10,704
	Standard Error	148	227	338	96	247	173	61	

[a] Based on Yukon Territory commercial 8-1/2 in (21.6 cm) mesh gill net catch samples.

Appendix C.10. Yukon River District 1 chinook salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group									
		1983	1982		1981		1980		1979		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Female	Percent of Sample	0.0	1.4	0.0	44.8	0.1	4.9	1.7	0.0	0.3	53.3
	Number in Catch	0	105	0	3,261	6	359	125	2	19	3,877
Male	Percent of Sample	2.6	5.1	0.0	32.6	0.5	4.0	1.7	0.0	0.2	46.7
	Number in Catch	190	372	3	2,370	34	293	122	3	14	3,402
Total	Percent of Sample	2.6	6.6	0.0	77.4	0.6	9.0	3.4	0.1	0.5	100.0
	Number in Catch	190	477	3	5,631	40	651	247	5	34	7,278

[a] Based on District 1 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix C.11. Yukon River District 2 chinook salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group								
		1983	1982		1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5	Total
Female	Percent of Sample	0.1	0.5	0.0	36.7	0.2	5.9	1.2	0.1	44.6
	Number in Catch	13	48	0	3,619	20	581	117	7	4,405
Male	Percent of Sample	4.5	7.6	0.1	35.2	0.3	6.0	1.5	0.1	55.4
	Number in Catch	445	754	7	3,473	33	596	147	5	5,461
Total	Percent of Sample	4.6	8.1	0.1	71.9	0.5	11.9	2.7	0.1	100.0
	Number in Catch	458	802	7	7,093	53	1,177	264	13	9,866

[a] Based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix C.12. Yukon River District 3 chinook salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group								
		1983	1982		1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	2.5	Total
Female	Percent of Sample	0.1	0.5	0.0	36.7	0.2	5.9	1.2	0.1	44.6
	Number in Catch	6	22	0	1,710	9	275	55	3	2,081
Male	Percent of Sample	4.5	7.6	0.1	35.2	0.3	6.0	1.5	0.1	55.4
	Number in Catch	210	356	3	1,641	16	281	69	3	2,580
Total	Percent of Sample	4.6	8.1	0.1	71.9	0.5	11.9	2.7	0.1	100.0
	Number in Catch	216	379	3	3,351	25	556	125	6	4,661

[a] Based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix C.13. Yukon Territory chinook salmon subsistence catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group							
		1983	1982	1981		1980		1979	
		1.2	1.3	1.4	2.3	1.5	2.4	2.5	Total
Female	Percent of Sample	2.9	5.7	31.7	1.2	11.8	4.5	0.4	58.2
	Number in Catch	183	361	2,005	76	746	285	25	3,682
Male	Percent of Sample	2.0	6.9	25.6	0.8	3.7	2.4	0.4	41.8
	Number in Catch	127	436	1,619	51	234	152	25	2,644
Total	Percent of Sample	4.9	12.6	57.3	2.0	15.5	6.9	0.8	100.0
	Number in Catch	310	797	3,625	127	981	436	51	6,326

[a] Based on Yukon Territory commercial 8-1/2 in (21.6 cm) mesh gill net catch samples.

Appendix C.14. Yukon River chinook salmon samples by age, sex, and length (mm), collected in 1987 but not used to estimate catch or escapement age composition.[a]

		Brood Year and Age Group										
		1984	1983	1982		1981		1980		1979		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Big Eddy 8-1/2 in Set Gill Net[b]												
Sample Dates: 6/07 - 7/15												
Sample Size: 396												
Female	Mean Length			900		878	785	912	868		913	
	Percent	0.0	0.0	1.0	0.0	53.0	0.3	6.0	4.0	0.0	0.5	64.8
	Sample Size	0	0	4	0	210	1	24	16	0	2	257
Male	Mean Length	360	555	787		876	725	887	872			
	Percent	0.3	0.8	1.3	0.0	25.3	0.5	4.8	2.2	0.0	0.0	35.2
	Sample Size	1	3	5	0	100	2	19	9	0	0	139
Total	Percent	0.3	0.8	2.3	0.0	78.3	0.8	10.8	6.2	0.0	0.5	100.0
	Sample Size	1	3	9	0	310	3	43	25	0	2	396
Big Eddy 8-1/2 in Drift Gill Net[b]												
Sample Dates: 6/07 - 6/14												
Sample Size: 41												
Female	Mean Length			825		891		882				
	Percent	0.0	0.0	2.4	0.0	48.9	0.0	14.6	0.0	0.0	0.0	65.9
	Sample Size	0	0	1	0	20	0	6	0	0	0	27
Male	Mean Length			765		854		932	868			
	Percent	0.0	0.0	4.9	0.0	14.6	0.0	7.3	7.3	0.0	0.0	34.1
	Sample Size	0	0	2	0	6	0	3	3	0	0	14
Total	Percent	0.0	0.0	7.3	0.0	63.5	0.0	21.9	7.3	0.0	0.0	100.0
	Sample Size	0	0	3	0	26	0	9	3	0	0	41
Big Eddy 5-1/2 in Set Gill Net[b]												
Sample Dates: 6/06 - 7/06												
Sample Size: 36												
Female	Mean Length				590	856			805			
	Percent	0.0	0.0	0.0	2.8	11.1	0.0	0.0	2.8	0.0	0.0	16.7
	Sample Size	0	0	0	1	4	0	0	1	0	0	6
Male	Mean Length		556	641		852	625	970	830			
	Percent	0.0	33.3	27.7	0.0	13.9	2.8	2.8	2.8	0.0	0.0	83.3
	Sample Size	0	12	10	0	5	1	1	1	0	0	30
Total	Percent	0.0	33.3	27.7	2.8	25.0	2.8	2.8	5.6	0.0	0.0	100.0
	Sample Size	0	12	10	1	9	1	1	2	0	0	36
Middle Mouth 8-1/2 in Set Gill Net[b]												
Sample Dates: 6/05 - 7/13												
Sample Size: 69												
Female	Mean Length			755		879		956				
	Percent	0.0	0.0	2.9	0.0	37.7	0.0	10.2	0.0	0.0	0.0	50.8
	Sample Size	0	0	2	0	26	0	7	0	0	0	35
Male	Mean Length		550	755		884		941				
	Percent	0.0	1.4	4.3	0.0	37.7	0.0	5.8	0.0	0.0	0.0	49.2
	Sample Size	0	1	3	0	26	0	4	0	0	0	34
Total	Percent	0.0	1.4	7.2	0.0	75.4	0.0	16.0	0.0	0.0	0.0	100.0
	Sample Size	0	1	5	0	52	0	11	0	0	0	69

Continued

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		Brood Year and Age Group										
		1984	1983	1982		1981		1980		1979		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Middle Mouth 5-1/2 in Set Gill Net[b]												
Sample Dates: 6/20 - 7/13												
Sample Size: 64												
Female	Mean Length		670	693		835						
	Percent	0.0	1.6	3.1	0.0	20.3	0.0	0.0	0.0	0.0	0.0	25.0
	Sample Size	0	1	2	0	13	0	0	0	0	0	16
Male	Mean Length		553	664		900		870				
	Percent	0.0	50.0	12.5	0.0	10.9	0.0	1.6	0.0	0.0	0.0	75.0
	Sample Size	0	32	8	0	7	0	1	0	0	0	48
Total	Percent	0.0	51.6	15.6	0.0	31.2	0.0	1.6	0.0	0.0	0.0	100.0
	Sample Size	0	33	10	0	20	0	1	0	0	0	64
Emmonak Subsistence 8-1/2 in Gill Net												
Sample Dates: 6/03 - 6/12												
Sample Size: 132												
Female	Mean Length					874		937	851			
	Percent	0.0	0.0	0.0	0.0	33.3	0.0	7.6	6.8	0.0	0.0	47.7
	Sample Size	0	0	0	0	44	0	10	9	0	0	63
Male	Mean Length		600	738		870	730	977	811		915	
	Percent	0.0	0.8	6.8	0.0	30.3	2.3	3.8	6.8	0.0	1.5	52.3
	Sample Size	0	1	9	0	40	3	5	9	0	2	69
Total	Percent	0.0	0.8	6.8	0.0	63.6	2.3	11.4	13.6	0.0	1.5	100.0
	Sample Size	0	1	9	0	84	3	15	18	0	2	132
Emmonak Subsistence 5-1/2 in Gill Net												
Sample Dates: 6/05 - 6/12												
Sample Size: 27												
Female	Mean Length		620	740		903			970			
	Percent	0.0	3.7	7.4	0.0	11.1	0.0	0.0	3.7	0.0	0.0	25.9
	Sample Size	0	1	2	0	3	0	0	1	0	0	7
Male	Mean Length		581	661		950	718	995				
	Percent	0.0	18.5	29.7	0.0	3.7	18.5	3.7	0.0	0.0	0.0	74.1
	Sample Size	0	5	8	0	1	5	1	0	0	0	20
Total	Percent	0.0	22.2	37.1	0.0	14.8	18.5	3.7	3.7	0.0	0.0	100.0
	Sample Size	0	6	10	0	4	5	1	1	0	0	27
Fairbanks Commercial Gill Net												
Sample Dates: 7/11												
Sample Size: 15												
Female	Mean Length					802		910				
	Percent	0.0	0.0	0.0	0.0	20.0	0.0	6.7	0.0	0.0	0.0	26.7
	Sample Size	0	0	0	0	3	0	1	0	0	0	4
Male	Mean Length			650		821		875	820			
	Percent	0.0	0.0	13.3	0.0	33.3	0.0	20.0	6.7	0.0	0.0	73.3
	Sample Size	0	0	2	0	5	0	3	1	0	0	11
Total	Percent	0.0	0.0	13.3	0.0	53.3	0.0	26.7	6.7	0.0	0.0	100.0
	Sample Size	0	0	2	0	8	0	4	1	0	0	15

Continued

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		Brood Year and Age Group										
		1984	1983	1982		1981		1980		1979		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Fairbanks Commercial Fish Wheel												
Sample Dates: 7/14												
Sample Size: 9												
Female	Mean Length					863						
	Percent	0.0	0.0	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	22.2
	Sample Size	0	0	0	0	2	0	0	0	0	0	2
Male	Mean Length		550	710		760						
	Percent	0.0	11.2	44.4	0.0	22.2	0.0	0.0	0.0	0.0	0.0	77.8
	Sample Size	0	1	4	0	2	0	0	0	0	0	7
Total	Percent	0.0	11.2	44.4	0.0	44.4	0.0	0.0	0.0	0.0	0.0	100.0
	Sample Size	0	1	4	0	4	0	0	0	0	0	9
Big Salmon River Weir Carcass Samples[c]												
Sample Size: 83												
Female	Mean Length					930		912				
	Percent	0.0	0.0	0.0	0.0	3.6	0.0	1.2	0.0	0.0	0.0	4.8
	Sample Size	0	0	0	0	3	0	1	0	0	0	4
Male	Mean Length		612	751	670	913	713	1110	821			
	Percent	0.0	7.2	42.2	2.4	22.9	12.0	2.4	6.0	0.0	0.0	95.1
	Sample Size	0	6	35	2	19	10	2	5	0	0	79
Total	Percent	0.0	7.2	42.2	2.4	26.5	12.0	3.6	6.0	0.0	0.0	100.0
	Sample Size	0	6	35	2	22	10	3	5	0	0	83
Whitehorse Fishway Eggtake Samples[c]												
Sample Size: 74												
Female	Mean Length			850		896		942	870			
	Percent	0.0	0.0	6.8	0.0	48.6	0.0	5.4	5.4	0.0	0.0	66.2
	Sample Size	0	0	5	0	36	0	4	4	0	0	49
Male	Mean Length		575	807		874		1000				
	Percent	0.0	1.4	14.9	0.0	16.2	0.0	1.4	0.0	0.0	0.0	33.9
	Sample Size	0	1	11	0	12	0	1	0	0	0	25
Total	Percent	0.0	1.4	21.7	0.0	64.8	0.0	6.8	5.4	0.0	0.0	100.0
	Sample Size	0	1	16	0	48	0	5	4	0	0	74
DFO Mark/Recapture Fish Wheel Catch[c,d]												
Sample Size: 516												
Female	Mean Length			645		741	732	812	742		835	
	Percent	0.0	0.0	1.0	0.0	40.9	0.2	4.1	1.7	0.0	0.2	48.1
	Sample Size	0	0	5	0	211	1	21	9	0	1	248
Male	Mean Length		588	625	507	720	626	822	680		841	
	Percent	0.0	4.3	17.2	0.4	25.6	1.2	1.9	1.2	0.0	0.2	52.0
	Sample Size	0	22	89	2	132	6	10	6	0	1	268
Total	Percent	0.0	4.3	18.2	0.4	66.5	1.4	6.0	2.9	0.0	0.4	100.0
	Sample Size	0	22	94	2	343	7	31	15	0	2	516

[a] Length measured from mid-orbit to fork of tail.
[b] Test fishing project located in District 1 near Emmonak.
[c] Length measured from tip of snout to fork of tail.
[d] Research project located just upstream from U.S./Canada border.

Appendix D.1. Yukon River District 1 summer chum salmon commercial gill net catch, age, and sex composition by sampling period, 1987.

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Stratum Dates:	6/15-6/19						
Sample Dates:	6/16, 6/19						
Sample Size:	468[a]						
Female	Percent of Sample	0.2	19.2	18.6	5.4	0.0	43.4
	Number in Catch	47	5,916	5,718	1,665	0	13,346
Male	Percent of Sample	0.0	21.5	27.4	7.7	0.0	56.6
	Number in Catch	0	6,621	8,440	2,362	0	17,423
Total	Percent of Sample	0.2	40.7	46.0	13.1	0.0	100.0
	Number in Catch	47	12,537	14,158	4,027	0	30,768
	Standard Error	47	730	739	504	0	
Stratum Dates:	6/22-6/26						
Sample Dates:	6/23, 6/26						
Sample Size:	456[a]						
Female	Percent of Sample	0.0	21.0	17.8	4.3	0.0	43.0
	Number in Catch	0	7,770	6,586	1,600	0	15,956
Male	Percent of Sample	0.0	31.5	21.3	4.0	0.2	57.0
	Number in Catch	0	11,683	7,906	1,471	59	21,119
Total	Percent of Sample	0.0	52.5	39.1	8.3	0.2	100.0
	Number in Catch	0	19,453	14,492	3,071	59	37,074
	Standard Error	0	896	874	492	59	
Stratum Dates:	6/29-7/03						
Sample Dates:	6/30, 7/03						
Sample Size:	451[b]						
Female	Percent of Sample	0.0	18.2	19.5	4.6	0.0	42.3
	Number in Catch	0	21,423	23,022	5,450	0	49,895
Male	Percent of Sample	0.0	35.2	17.6	4.9	0.0	57.7
	Number in Catch	0	41,566	20,823	5,743	0	68,132
Total	Percent of Sample	0.0	53.4	37.1	9.5	0.0	100.0
	Number in Catch	0	62,989	43,845	11,193	0	118,028
	Standard Error	0	2,797	2,712	1,640	0	

Continued

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Stratum Dates:	7/09-7/10						
Sample Dates:	7/10						
Sample Size:	226[b]						
Female	Percent of Sample	0.0	32.7	13.7	4.0	0.0	50.4
	Number in Catch	0	12,124	5,079	1,475	0	18,678
Male	Percent of Sample	0.0	31.9	14.2	3.5	0.0	49.6
	Number in Catch	0	11,797	5,243	1,311	0	18,351
Total	Percent of Sample	0.0	64.6	27.9	7.5	0.0	100.0
	Number in Catch	0	23,921	10,322	2,785	0	37,028
	Standard Error	0	1,180	1,107	651	0	
Stratum Dates:	6/15-7/10	Season Total					
Sample Dates:	6/16-7/10						
Sample Size:	1,601						
Female	Percent of Sample	0.0	21.2	18.1	4.6	0.0	43.9
	Number in Catch	47	47,233	40,405	10,190	0	97,875
Male	Percent of Sample	0.0	32.2	19.0	4.9	0.0	56.1
	Number in Catch	0	71,667	42,412	10,887	59	125,025
Total	Percent of Sample	0.0	53.3	37.2	9.5	0.0	100.0
	Number in Catch	47	118,900	82,817	21,076	59	222,898
	Standard Error	47	3,249	3,144	1,900	59	

[a] Based on samples from District 1 commercial catch during unrestricted mesh size gill net fishing periods.

[b] Based on samples from District 1 commercial catch during 6 in (15.2 cm) maximum mesh size gill net fishing period(s).

Appendix D.2. Yukon River District 2 summer chum salmon commercial gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Female	Percent of Sample	0.0	21.2	18.1	4.6	0.0	43.9
	Number in Catch	37	37,057	31,700	7,995	0	76,788
Male	Percent of Sample	0.0	32.2	19.0	4.9	0.0	56.1
	Number in Catch	0	56,227	33,275	8,541	46	98,089
Total	Percent of Sample	0.0	53.3	37.2	9.5	0.0	100.0
	Number in Catch	37	93,284	64,975	16,535	46	174,876

[a] Based on pooled samples from District 1 commercial catch during both unrestricted and 6 in (15.2 cm) maximum mesh size gill net fishing periods.

Appendix D.3. Yukon River District 3 summer chum salmon commercial gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Female	Percent of Sample	0.0	21.2	18.1	4.6	0.0	43.9
	Number in Catch	1	742	635	160	0	1,537
Male	Percent of Sample	0.0	32.2	19.0	4.9	0.0	56.1
	Number in Catch	0	1,126	666	171	1	1,964
Total	Percent of Sample	0.0	53.3	37.2	9.5	0.0	100.0
	Number in Catch	1	1,868	1,301	331	1	3,501

[a] Based on pooled samples from District 1 commercial catch during both unrestricted and 6 in (15.2 cm) maximum mesh size gill net fishing periods.

Appendix D.4. Yukon River District 4 summer chum salmon commercial fish wheel catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group			
		1983	1982	1981	
		0.3	0.4	0.5	Total
Stratum Dates:	6/21-7/28				
Sample Dates:	7/7-7/27				
Sample Size:	118				
Female	Percent of Sample	46.6	6.8	0.0	53.4
	Number in Catch	47,110	6,852	0	53,963
Male	Percent of Sample	35.6	9.3	1.7	46.6
	Number in Catch	35,975	9,422	1,713	47,110
Total	Percent of Sample	82.2	16.1	1.7	100.0
	Number in Catch	83,085	16,274	1,713	101,073[b]
	Standard Error	3,574	3,434	1,206	

[a] Based on samples from District 4 commercial fish wheel catch.

[b] Total includes an estimated 9,188 fish sold in the round; 37,950 "equivalent salmon" converted from roe sales by assuming one pound of roe to be equivalent to one female chum salmon; and an estimated 53,935 fish not sold in the round, sold for roe, or used for subsistence purposes.

Appendix D.5. Yukon River District 6 summer chum salmon commercial fish wheel catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group				
		1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	Total
Stratum Dates:	7/03-8/16					
Sample Dates:	7/14-8/15					
Sample Size:	262					
Female	Percent of Sample	4.2	32.1	18.7	3.8	58.8
	Number in Catch	406	3,098	1,807	369	5,679
Male	Percent of Sample	1.5	30.2	6.5	3.1	41.2
	Number in Catch	148	2,913	627	295	3,983
Total	Percent of Sample	5.7	62.2	25.2	6.9	100.0
	Number in Catch	553	6,011	2,434	664	9,662
	Standard Error	139	290	260	151	

[a] Based on samples from District 6 commercial fish wheel catch.

Appendix D.6. Yukon River District 1 summer chum salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Female	Percent of Sample	0.0	21.2	18.1	4.6	0.0	43.9
	Number in Catch	6	6,518	5,576	1,406	0	13,507
Male	Percent of Sample	0.0	32.2	19.0	4.9	0.0	56.1
	Number in Catch	0	9,890	5,853	1,502	8	17,253
Total	Percent of Sample	0.0	53.3	37.2	9.5	0.0	100.0
	Number in Catch	6	16,408	11,429	2,908	8	30,760

[a] Based on pooled samples from District 1 commercial catch during both unrestricted and 6 in (15.2 cm) maximum mesh size gill net fishing periods.

Appendix D.7. Yukon River District 2 summer chum salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Female	Percent of Sample	0.0	21.2	18.1	4.6	0.0	43.9
	Number in Catch	7	7,021	6,006	1,515	0	14,549
Male	Percent of Sample	0.0	32.2	19.0	4.9	0.0	56.1
	Number in Catch	0	10,653	6,305	1,618	9	18,585
Total	Percent of Sample	0.0	53.3	37.2	9.5	0.0	100.0
	Number in Catch	7	17,675	12,311	3,133	9	33,134

[a] Based on pooled samples from District 1 commercial catch during both unrestricted and 6 in (15.2 cm) maximum mesh size gill net fishing periods.

Appendix D.8. Yukon River District 3 summer chum salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Female	Percent of Sample	0.0	21.2	18.1	4.6	0.0	43.9
	Number in Catch	1	882	754	190	0	1,827
Male	Percent of Sample	0.0	32.2	19.0	4.9	0.0	56.1
	Number in Catch	0	1,338	792	203	1	2,334
Total	Percent of Sample	0.0	53.3	37.2	9.5	0.0	100.0
	Number in Catch	1	2,220	1,546	393	1	4,161

[a] Based on pooled samples from District 1 commercial catch during both unrestricted and 6 in (15.2 cm) maximum mesh size gill net fishing periods.

Appendix D.9. Yukon River District 4 summer chum salmon subsistence fish wheel catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group				
		1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	Total
Sample Dates:	7/24-8/12					
Sample Size:	203					
Female	Percent of Sample	0.5	41.9	14.3	0.5	57.1
	Number in Catch	659	56,023	19,114	659	76,454
Male	Percent of Sample	0.5	28.6	12.3	1.5	42.9
	Number in Catch	659	38,227	16,477	1,977	57,341
Total	Percent of Sample	1.0	70.4	26.6	2.0	100.0
	Number in Catch	1,318	94,250	35,591	2,636	133,795
	Standard Error	930	4,295	4,160	1,308	

[a] Based on samples from District 4 subsistence fish wheel catch.

Appendix D.10. Yukon River District 6 summer chum salmon subsistence fish wheel catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group				
		1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	4.2	32.1	18.7	3.8	58.8
	Number in Catch	860	6,567	3,831	782	12,039
Male	Percent of Sample	1.5	30.2	6.5	3.1	41.2
	Number in Catch	313	6,176	1,329	625	8,443
Total	Percent of Sample	5.7	62.2	25.2	6.9	100.0
	Number in Catch	1,173	12,743	5,160	1,407	20,482

[a] Based on samples from District 6 commercial fish wheel catch.

Appendix D.11. Yukon River summer chum salmon samples by age, sex, and length (mm), collected in 1987 but not used to estimate fishery catch or escapement age composition.[a]

Location, Gear, and Date	Sex	Total N	Total %	Age 0.2 N	Age 0.2 %	Age 0.2 Length	Age 0.3 N	Age 0.3 %	Age 0.3 Length	Age 0.4 N	Age 0.4 %	Age 0.4 Length	Age 0.5 N	Age 0.5 %	Age 0.5 Length
Big Eddy[b]	Female	462	56.5	3	0.4	567	209	25.6	559	222	27.1	578	28	3.4	594
5-1/2 in Gill Net	Male	356	43.5	1	0.1	510	197	24.1	575	127	15.5	603	31	3.8	609
6/07-7/15	Total	818	100.0	4	0.5		406	49.6		349	42.7		59	7.2	
Middle Mouth[b]	Female	202	57.5	3	0.9	552	80	22.8	552	106	30.2	569	13	3.7	573
5-1/2 in Gill Net	Male	149	42.5	0	0.0	-	85	24.2	573	56	16.0	601	8	2.3	595
6/12-7/12	Total	351	100.0	3	0.9		165	47.0		162	46.2		21	6.0	
Emmonak Subs[c]	Female	23	60.5	0	0.0	-	11	28.9	571	10	26.3	601	2	5.3	618
5-1/2 in Gill Net	Male	15	39.5	0	0.0	-	5	13.2	580	8	21.1	622	2	5.3	635
6/09-6/11	Total	38	100.0	0	0.0		16	42.1		18	47.4		4	10.5	
Bettles[d]	Female	8	88.9	0	0.0	-	5	55.6	562	3	33.3	563	0	0.0	-
Subs Gill Net	Male	1	11.1	0	0.0	-	0	0.0	-	1	11.1	575	0	0.0	-
8/12	Total	9	100.0	0	0.0		5	55.6		4	44.4		0	0.0	
Nenana Comm[e]	Female	22	48.9	0	0.0	-	3	6.7	572	16	35.6	600	3	6.7	632
Fish Wheel	Male	23	51.1	1	2.2	600	7	15.6	601	12	26.7	626	3	6.7	601
7/19	Total	45	100.0	1	2.2		10	22.2		28	62.2		6	13.3	
Fairbanks[e]	Female	11	40.7	0	0.0	-	4	14.8	581	6	22.2	598	1	3.7	635
Comm Gill Net	Male	16	59.3	0	0.0	-	6	22.2	592	6	22.2	618	4	14.8	629
7/18-7/21	Total	27	100.0	0	0.0		10	37.0		12	44.4		5	18.5	

[a] Length measured from mid-orbit to fork of tail.
[b] Test fishing project located in District 1 near Emmonak.
[c] Fishery located in District 1.
[d] Fishery located in District 4.
[e] Fishery located in District 6.

Appendix E.1. Yukon Territory, Canada, fall chum salmon commercial catch, age, and sex composition, 1987[a].

		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	Total
Stratum Dates:	7/15-10/22				
Sample Size:	433				
Female	Percent of Sample	0.7	21.7	5.1	27.5
	Number in Catch	282	8,754	2,057	11,094
Male	Percent of Sample	2.5	54.3	15.7	72.5
	Number in Catch	1,009	21,905	6,334	29,247
Total	Percent of Sample	3.2	76.0	20.8	100.0
	Number in Catch	1,291	30,659	8,391	40,341
	Standard Error	342	829	788	

[a] Based on Yukon Territory commercial gill net and fish wheel catch samples.

Appendix E.2. Yukon River District 1 fall chum salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group 1984 0.2	1983 0.3	1982 0.4	1981 0.5	1980 0.6	Total
Female	Percent of Sample	0.2	41.9	9.6	0.7	0.1	52.5
	Number in Catch	41	7,735	1,780	123	14	9,692
Male	Percent of Sample	0.4	40.0	6.7	0.4	0.0	47.5
	Number in Catch	82	7,379	1,232	82	0	8,775
Total	Percent of Sample	0.7	81.8	16.3	1.1	0.1	100.0
	Number in Catch	123	15,113	3,012	205	14	18,467

[a] Based on samples from test fishing gill nets at Big Eddy and Middle Mouth located in District 1 near Emmonak.

Appendix E.3. Yukon River District 2 fall chum salmon subsistence gill net catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group					
		1984	1983	1982	1981	1980	
		0.2	0.3	0.4	0.5	0.6	Total
Female	Percent of Sample	0.2	41.9	9.6	0.7	0.1	52.5
	Number in Catch	30	5,635	1,297	90	10	7,061
Male	Percent of Sample	0.4	40.0	6.7	0.4	0.0	47.5
	Number in Catch	60	5,376	898	60	0	6,393
Total	Percent of Sample	0.7	81.8	16.3	1.1	0.1	100.0
	Number in Catch	90	11,011	2,194	150	10	13,454

[a] Based on samples from test fishing gill nets at Big Eddy and Middle Mouth located in District 1 near Emmonak.

Appendix E.4. Yukon River District 4 fall chum salmon subsistence fish wheel catch, age, and sex composition, 1987.[a]

		Brood Year and Age Group				
		1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	Total
Sample Dates:	8/10-9/13					
Sample Size:	1,146					
Female	Percent of Sample	1.3	40.8	9.2	0.1	51.3
	Number in Catch	494	15,367	3,455	33	19,349
Male	Percent of Sample	0.8	35.6	12.2	0.1	48.7
	Number in Catch	296	13,426	4,607	33	18,362
Total	Percent of Sample	2.1	76.4	21.4	0.2	100.0
	Number in Catch	790	28,793	8,062	66	37,711
	Standard Error	160	474	457	47	

[a] Based on samples from test fishing fish wheel near Ruby.

Appendix E.5. Yukon River District 5 fall chum salmon subistence fish wheel catch, age, and sex composition, 1987[a].

		Brood Year and Age Group 1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	Total
Sample Dates:	8/26-8/30					
Sample Size:	1,080					
Female	Percent of Sample	3.8	26.2	5.6	0.2	35.8
	Number in Catch	4,416	30,481	6,570	215	41,682
Male	Percent of Sample	4.1	50.2	9.7	0.2	64.2
	Number in Catch	4,739	58,377	11,309	215	74,640
Total	Percent of Sample	7.9	76.4	15.4	0.4	100.0
	Number in Catch	9,155	88,858	17,879	431	116,323
	Standard Error	954	1,504	1,277	215	

[a] Based on District 5 subsistence fish wheel catch samples.

Appendix E.6. Yukon Territory, Canada, fall chum salmon subsistence catch, age, and sex composition, 1987[a].

		Brood Year and Age Group 1984	1983	1982	
		0.2	0.3	0.4	Total
Female	Percent of Sample	0.7	21.7	5.1	27.5
	Number in Catch	27	847	199	1,074
Male	Percent of Sample	2.5	54.3	15.7	72.5
	Number in Catch	98	2,120	613	2,830
Total	Percent of Sample	3.2	76.0	20.8	100.0
	Number in Catch	125	2,967	812	3,904

[a] Based on Yukon Territory commercial gill net and fish wheel catch samples.

Appendix E.7. Yukon River fall chum salmon samples by age, sex, and length (mm), collected in 1987 but not used to apportion harvest or not used to estimate mean length for apportioned harvest.[a]

Location, Gear, and Date	Sex	Total		Age 0.2			Age 0.3			Age 0.4			Age 0.5			Age 0.6		
		N	%	N	%	Length	N	%	Length	N	%	Length	N	%	Length	N	%	Length
Big Eddy[b]	Female	337	50.3	2	0.3	575	278	41.5	602	52	7.8	613	5	0.7	643	0	0.0	-
6 in Gill net	Male	333	49.7	3	0.4	583	285	42.5	608	43	6.4	624	2	0.3	588	0	0.0	-
7/16-8/27	Total	670	100.0	5	0.7		563	84.0		95	14.2		7	1.0		0	0.0	
Middle Mouth[b]	Female	371	54.6	1	0.1	550	287	42.3	598	78	11.5	609	4	0.6	636	1	0.1	580
6 in Gill net	Male	308	45.4	3	0.4	583	254	37.4	609	47	6.9	621	4	0.6	615	0	0.0	-
7/15-8/28	Total	679	100.0	4	0.6		541	79.7		125	18.4		8	1.2		1	0.1	
DFO Mark/Recapture	Female	1,358	60.6	50	2.2	512	1134	50.6	515	174	7.8	539	0	0.0	-	0	0.0	-
Fish Wheel[c]	Male	884	39.4	27	1.2	538	709	31.6	538	146	6.5	560	2	0.1	549	0	0.0	-
	Total	2,242	100.0	77	3.4		1843	82.2		320	14.3		2	0.1		0	0.0	

[a] Length measured from mid-orbit to fork of tail.

[b] Test fishing project located in District 1 near Emmonak.

[c] Length measured from post-orbit to hypural plate.

Appendix F.1. Yukon River coho salmon samples by age, sex, and length (mm), collected in 1987 but not used to estimate fishery catch or escapement age composition.[a]

Location, Gear, and Date	Sex	Total		Age 1.1			Age 2.1			Age 3.1		
		N	%	N	%	Length	N	%	Length	N	%	Length
Big Eddy[b]	Female	146	38.3	50	13.1	584	89	23.4	584	7	1.8	582
6 in Gill net	Male	235	61.7	87	22.8	589	133	34.9	584	15	3.9	603
7/30-8/26	Total	381	100.0	137	36.0		222	58.3		22	5.8	
Middle Mouth[b]	Female	59	44.7	21	15.9	589	32	24.2	585	6	4.5	591
6 in Gill net	Male	73	55.3	12	9.1	587	48	36.4	582	13	9.8	577
8/03-8/28	Total	132	100.0	33	25.0		80	60.6		19	14.4	

[a] Length measured from mid-orbit to fork of tail.
[b] Test fishing project located in District 1 near Emmonak.